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TN-275-1673

JULY 1976

# SRB-IIID SOLID ROCKET BOOSTER PERFORMANCE PREDICTION PROGRAM

## VOLUME II SAMPLE CASE

Submitted To:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GEORGE C. MARSHALL SPACE FLIGHT CENTER  
Science and Engineering Directorate

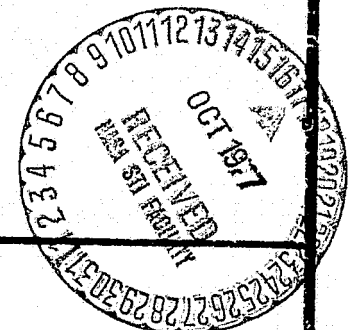
Under Contract NAS8-31644

Submitted By:

**NORTHROP SERVICES, INC.**

P. O. BOX 1484 Huntsville, Alabama 35807 (205) 837-0580

**NSI**





**SRB-IIID SOLID ROCKET BOOSTER  
PERFORMANCE PREDICTION PROGRAM  
VOLUME II - SAMPLE CASE**

by

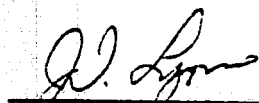
J. C. Winkler

PREPARED FOR:

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GEORGE C. MARSHALL SPACE FLIGHT CENTER  
SYSTEMS ANALYSIS AND INTEGRATION LABORATORY**

**Under Contract NAS8-31644**

REVIEWED AND APPROVED BY:



**J. T. Lyons, Leader  
Systems Performance Unit**

**NORTHROP SERVICES, INC.  
HUNTSVILLE, ALABAMA**

## FOREWORD

This document presents work performed by Northrop Services, Inc., Huntsville, Alabama, while under contract to the Science and Engineering Directorate of Marshall Space Flight Center (NAS8-31644). This task was conducted in response to the requirements of Schedule Order 1.7.5, Amendment No. 1, Task No. 1. Mr. J. R. Redus, EL-24, is the Technical Coordinator.

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## Section I

### INTRODUCTION

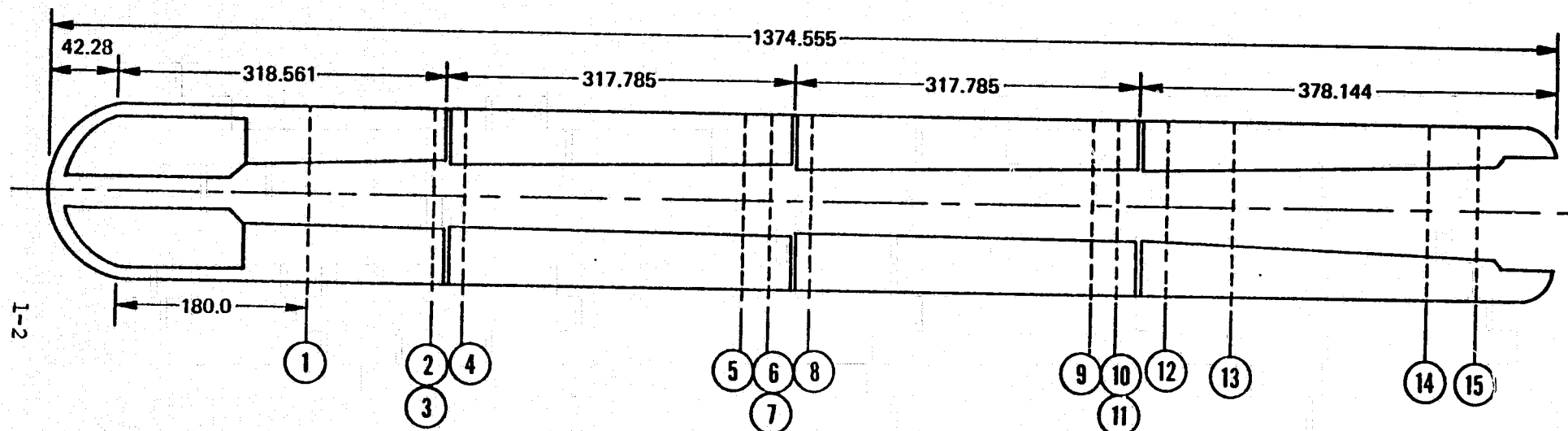
This document contains Volume II of a set of three volumes which describe the SRB-IIID program. Volume I contains the SRB-IIID engineering description and users information manual, Volume II contains the sample case prediction, and Volume III contains the program listing and programmers information.

The sample case presented in this volume is an asymmetrical eight sector thermal gradient performance prediction for the solid rocket motor shown in Figure 1-1. This motor is the Thiokol TC-227A-75 grain design and the initial grain geometry is assumed to be symmetrical about the motors longitudinal axis.

Thermal data used in this sample case were furnished by MSFC.\*

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\* Winkler, J. C., "Results of Thermal Effects Study/KSC Hot Case", Northrop Services, Inc., Huntsville, Alabama, Informal Memorandum, 9275-76-60, June 16, 1976.



#### REFERENCE PLANE LONGITUDINAL LOCATIONS

|   |         |                                                                    |         |    |          |
|---|---------|--------------------------------------------------------------------|---------|----|----------|
| 1 | 0.0     | (SIMULATED FORE TANGENT PLANE 180 INCHES DOWNSTREAM OF ACTUAL FTP) |         |    |          |
| 2 | 116.761 | 5                                                                  | 403.048 | 8  | 463.204  |
| 3 | 116.771 | 6                                                                  | 427.051 | 9  | 726.191  |
| 4 | 143.919 | 7                                                                  | 427.061 | 10 | 746.336  |
|   |         |                                                                    |         | 11 | 746.346  |
|   |         |                                                                    |         | 12 | 794.831  |
|   |         |                                                                    |         | 13 | 854.781  |
|   |         |                                                                    |         | 14 | 1040.791 |
|   |         |                                                                    |         | 15 | 1084.171 |

Figure 1-1. MOTOR CONFIGURATION USED IN SAMPLE CASE

## Section II

## INPUT DATA

The input data used in this sample case are reproduced in Figure 2-1 exactly as they were read in. The sector thermal data are shown as the last few cards in the list starting with the variable NSCTRS.

## CARD IMAGE OF INPUT DATA FOR CASE 1

## CONTROL DATA CARDS

```

$INPUT
TITLE(1)=6HSRB-11,6H10 SA,6HMPLE C,6HASE (,6H8 SECT,6HOR THE,6HRMAL G.
TITLE(8)=6HRADIEN,6HT) 7/,6H76
NPL0T=1,
NSCARD=1,
MITOT=735A.,
$END

```

## IBM DATA CARDS

## \$IBDATA

```

A(1NCIN(1))=0.0,116.761,116.771,143.919,403.048,427.051,427.061,463.204,726.191,
746.336,746.346,794.831,854.781,1040.791,1084.171,
HCU=1084.171,
AND(1)=15.8.0,
RF(1,1)=
72.384,72.384,72.384,72.314,72.214,72.214,72.214,72.314,72.214,72.214,72.214,
RF(12,1)=
72.180,72.132,71.344,71.139,
R(1,1)=
28.727,29.110,29.110,28.980,30.750,31.185,31.185,28.950,30.750,31.185,31.185,
R(12,1)=
30.910,31.567,40.320,41.680,
SA(1)=116.761,427.051,746.336,
SB(1)=116.771,427.061,746.346,
DELZ=15.,
HHR=201.14,
SLTBKN(1)=3.3.0,
KPLANE=15,
BM=1.,
AOHM=90.,
BTADE=0.0,
DHI=42.0,
BN=1.,
DN=90.,
AONM=90.,
OLRF=0.01,
AKU(1)=5000.,
AKR(2)=0.33783,0.35,
AKR(36)=0.33783,0.35,
REFTEN=60.0,
BLKTEM=0.0,
SIGMAP=0.300975,
AKSLOT(1)=0.33783,0.35,
SLTBKN(1)=3.3.,
DELF=0.00345,
CM=0.9595,
DELH=22.81,
ERBAR=0.0078,

```

Figure 2-1. SAMPLE CASE INPUT DATA



Figure 2-1. SAMPLE CASE INPUT DATA (Continued)

```

.2000000+02, .2200000+02, .2400000+02, .2600000+02, .2800000+02,
.3000000+02, .3200000+02, .3400000+02, .3600000+02, .3800000+02,
.4000000+02, .4200000+02, .4364700+02, .4365700+02, .5000000+02,
ABMD(1)=
.1963625+06, .1992819+06, .1996675+06, .1997799+06, .1962201+06,
.1925525+06, .1892787+06, .1850205+06, .1807487+06, .1766137+06,
.1719924+06, .1704647+06, .1551024+06, .1457576+06, .1439015+06,
.1405634+06, .1268915+06, .1238614+06, .1122951+06, .1096236+06,
.9819881+05, .9551628+05, .8141196+05, .7006291+05, .6738955+05,
.5368681+05, .4348506+05, .4127281+05, .3281297+05, .3104130+05,
.2456551+05, .2312928+05, .1844226+05, .1818823+05, .1812474+05,
.17928915+05, .17271091+05, .15551291+05, .14270041+05, .13251059+05,
.11729036+05, .10348896+05, .90286500+04, .75671199+04, .60107009+04,
.44499825+04, .28806650+04, .36115848+03, .76293945+05, .000000,
NGEUMH=22,
TAUN(1)=0.,2.,4.,6.,8.,10.,12.,14.,16.,17.,18.,19.,20.,20.670,21.,22.,23.,24.,
26.,28.,29.46,50.,
ABNA(1)=9279.,9608.,9979.,10351.,10656.,10988.,11397.,11729.,12088.,12239.,
12389.,12559.,12729.,12450.,10500.,6649.,5500.,4646.,2892.,1148.,200.0,
ABNB(1)=14209.,14696.,14768.,14487.,13964.,13263.,12289.,11300.,9726.,8650.,
7390.,5507.,3057.,900.0,
VCHINP=3362642.14,
VCNINP=1040420.,
VCNINA=441001.,
VCNINB=599419.,
VFHO=2831295.1,
VFNO=505126.,
VFNOA=264736.,
VFNOB=240390.,
NGEO(1)=32,
NGEO( 2)= 24,
NGEO(3)=24,
NGEO(4)=24,
NGEO( 5)= 23,
NGEO( 6)= 23,
NGEO( 7)=24,
NGEO( 8)=24,
NGEO( 9)= 23,
NGEO(10)= 23,
NGEO(11)=23,
NGEO(12)=23,
NGEO(13)= 23,
NGEO(14)= 18,
NGEO(15)= 19,
APURT(1)=
C.25926E 04,0.26622E 04,0.26622E 04,
0.26384E 04,0.29706E 04,0.30552E 04,0.30552E 04,0.26330E 04,0.29706E 04,
0.30552E 04,0.30552E 04,0.30016E 04,0.31305E 04,0.51073E 04,0.54576E 04,
RPL (1,1)=0.,1.,2.,3.,4.,5.,6.,7.,8.,8.,8.,9.,10.,11.,12.,14.,16.,18.,19.,6.,20.,
22.,24.,26.,28.,30.,32.,34.,36.,38.,40.,42.,43.,647,43.657,
ALPPL(1,1)=180.5,186.8,193.1,199.4,205.6,211.9,218.2,224.5,230.8,235.8,237.1,
243.3,249.6,255.9,268.5,281.0,293.6,299.9,306.2,318.7,331.3,343.9,
356.4,369.0,381.6,394.1,406.7,419.3,431.8,444.4,454.7,0.0,
RPL(1,2)=
0.0 C.20000E 01, C.40000E 11, C.60000E 01, C.80000E 01, C.10000E 02,
0.12000E 02, C.14000E 02, 0.16000E 02, 0.18000E 02, C.20000E 02, C.22000E 02,

```

Figure 2-1. SAMPLE CASE INPUT DATA (Continued)

```

0.24000E 02, 0.24000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.42000E 02, 0.43264E 02, 0.43274E 02,
ALPPL(1, 2)=
0.18290E 03, 0.19547E 03, 0.20804E 03, 0.22060E 03, 0.23317E 03, 0.24574E 03,
0.25830E 03, 0.27087E 03, 0.28343E 03, 0.29600E 03, 0.30857E 03, 0.32113E 03,
0.33370E 03, 0.34627E 03, 0.35883E 03, 0.37140E 03, 0.38397E 03, 0.39653E 03,
0.40910E 03, 0.42166E 03, 0.43423E 03, 0.44680E 03, 0.45937E 03, 0.0
RPL (1,3)=0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4,
36.38.40.42.43.324.43.334,
ALPPL(1,3)=248.5, 235.2, 232.2, 234.4, 240.6, 251.2, 262.6, 272.6, 283.3, 291.4, 296.7,
307.0, 315.3, 321.7, 327.4, 335.8, 339.9, 345.2, 349.5, 264.7, -118.2, -346.2,
-454.0, 0.0,
RPL (1,4)=0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4,
36.38.40.42.43.324.43.334,
ALPPL(1,4)=182.1, 194.7, 207.2, 219.8, 232.4, 244.9, 257.5, 270.1, 282.6, 295.2, 307.8,
320.3, 332.9, 345.5, 358.0, 370.6, 383.2, 395.7, 408.3, 420.9, 433.4, 446.0,
454.0, 0.0,
RPL(1,5)=
0.0, 0.20000E 01, 0.40000E 01, 0.60000E 01, 0.80000E 01, 0.10000E 02,
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.41463E 02, 0.41464E 02,
ALPPL(1, 5)=
0.19887E 03, 0.21144E 03, 0.22400E 03, 0.23657E 03, 0.24913E 03, 0.26170E 03,
0.27427E 03, 0.28683E 03, 0.29940E 03, 0.31197E 03, 0.32453E 03, 0.33710E 03,
0.34967E 03, 0.36223E 03, 0.37480E 03, 0.38736E 03, 0.39993E 03, 0.41250E 03,
0.42506E 03, 0.43763E 03, 0.45020E 03, 0.45367E 03, 0.0
RPL(1,6)=
0.0, 0.20000E 01, 0.40000E 01, 0.60000E 01, 0.80000E 01, 0.10000E 02,
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.41019E 02, 0.41029E 02,
ALPPL(1, 6)=
0.19594E 03, 0.20851E 03, 0.22107E 03, 0.23364E 03, 0.24621E 03, 0.25877E 03,
0.27134E 03, 0.28391E 03, 0.29647E 03, 0.30904E 03, 0.32160E 03, 0.33417E 03,
0.34674E 03, 0.35930E 03, 0.37187E 03, 0.38444E 03, 0.39700E 03, 0.40957E 03,
0.42214E 03, 0.43470E 03, 0.44727E 03, 0.45983E 03, 0.0
RPL (1, 7)=0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4,
36.38.40.42.43.354.43.364,
ALPPL(1, 7)=369.9, 377.2, 387.3, 396.5, 403.9, 413.8, 415.6, 420.2, 428.2, 434.4, 442.4,
450.2, 457.1, 463.8, 355.4, 155.8, 52.5, -36.7, -129.4, -228.9, -320.1,
-413.4, -454.0, 0.0,
RPL (1, 8)=0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4,
36.38.40.42.43.354.43.364,
ALPPL(1, 8)=181.9, 194.5, 207.0, 219.6, 232.2, 244.7, 257.3, 269.9, 282.4, 295.0, 307.6,
320.1, 332.7, 345.3, 357.8, 370.4, 383.0, 395.5, 408.1, 420.7, 433.2, 445.8,
454.0, 0.0,
RPL(1,9)=
0.0, 0.20000E 01, 0.40000E 01, 0.60000E 01, 0.80000E 01, 0.10000E 02,
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.41454E 02, 0.41464E 02,
ALPPL(1, 9)=
0.19321E 03, 0.20577E 03, 0.21834E 03, 0.23091E 03, 0.24347E 03, 0.25604E 03,
0.26861E 03, 0.28117E 03, 0.29374E 03, 0.30631E 03, 0.31887E 03, 0.33144E 03,
0.34400E 03, 0.35657E 03, 0.36914E 03, 0.38170E 03, 0.39427E 03, 0.40684E 03,

```

Figure 2-1. SAMPLE CASE INPUT DATA (Continued)

```

0.41945E 03, 0.43197E 03, 0.44454E 03, 0.45367E 03, 0.0
RPL(1,10)=
0.0
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.41019E 02, 0.41029E 02,
ALPPL(1,10)=
0.19594E 03, 0.20851E 03, 0.22107E 03, 0.23364E 03, 0.24621E 03, 0.25877E 03,
0.27134E 03, 0.28391E 03, 0.29647E 03, 0.30904E 03, 0.32160E 03, 0.33417E 03,
0.34674E 03, 0.35930E 03, 0.37187E 03, 0.38444E 03, 0.39700E 03, 0.40957E 03,
0.42214E 03, 0.43470E 03, 0.44727E 03, 0.45367E 03, 0.0
RPL(1,11)=0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2,
3.4, 3.6, 3.8, 4.0, 4.1, 4.19, 4.1029,
ALPPL(1,11)=349.4, 349.5, 354.6, 362.5, 371.6, 380.8, 385.7, 393.5, 403.2, 412.3, 420.7,
428.9, 437.7, 446.2, 467.2, 219.3, 149.0, 87.6, 5.9, -130.2, -338.3, -453.5,
0.0,
RPL(1,12)=0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2,
3.4, 3.6, 3.8, 4.0, 4.1, 4.1029,
ALPPL(1,12)=194.2, 206.8, 219.4, 231.9, 244.5, 257.0, 269.6, 282.2, 294.7, 307.3, 319.9,
332.4, 345.0, 357.6, 370.1, 382.7, 395.3, 407.8, 420.4, 433.0, 445.5, 453.5,
0.0,
RPL(1,13)=
0.0
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.40553E 02, 0.40563E 02,
ALPPL(1,13)=
0.19834E 03, 0.21091E 03, 0.22347E 03, 0.23604E 03, 0.24861E 03, 0.26117E 03,
0.27374E 03, 0.28631E 03, 0.29887E 03, 0.31144E 03, 0.32400E 03, 0.33657E 03,
0.34914E 03, 0.36170E 03, 0.37427E 03, 0.38684E 03, 0.39940E 03, 0.41197E 03,
0.42454E 03, 0.43710E 03, 0.44967E 03, 0.45314E 03, 0.0
RPL(1,14)=
0.0
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.40553E 02, 0.40563E 02,
ALPPL(1,14)=
0.25334E 03, 0.26590E 03, 0.27847E 03, 0.29104E 03, 0.30360E 03, 0.31617E 03,
0.32874E 03, 0.34130E 03, 0.35387E 03, 0.36644E 03, 0.37900E 03, 0.39157E 03,
0.40413E 03, 0.41670E 03, 0.42927E 03, 0.44183E 03, 0.44820E 03, 0.0
RPL(1,15)=
0.0
0.12000E 02, 0.14000E 02, 0.16000E 02, 0.18000E 02, 0.20000E 02, 0.22000E 02,
0.24000E 02, 0.26000E 02, 0.28000E 02, 0.30000E 02, 0.32000E 02, 0.34000E 02,
0.36000E 02, 0.38000E 02, 0.40000E 02, 0.40553E 02, 0.40563E 02,
ALPPL(1,15)=
0.26188E 03, 0.27445E 03, 0.28702E 03, 0.29958E 03, 0.31215E 03, 0.32471E 03,
0.33728E 03, 0.34985E 03, 0.36241E 03, 0.37498E 03, 0.38755E 03, 0.39951E 03,
0.41257E 03, 0.40514E 03, 0.41771E 03, 0.43027E 03, 0.44284E 03, 0.44592E 03,
0.0
ABH(1)=23488.24304.24747.24838.24620.24251.23686.23029.21814.20889.
19779.18059.15779.12450.10500.6649.5500.4046.2892.1148.200.0,
NSCTRS=8,
NAKEND=3,
NAKHEO=16,
TAUMED(1)=0.4, 0.8, 1.2, 1.4, 1.6, 1.8, 2.0, 2.1, 4.25, 4.29, 4.33, 4.37, 4.39, 4.41, 4.50, 5,
TEHED(1)=3.79, 6.79, 5.79, 2.80, 4.81, 7.379, 5.279, 3.79, 9.81, 8.86, 9.90, 5,

```

Figure 2-1. SAMPLE CASE INPUT DATA (Continued)

```
NTAB(1)=8.15,  
TAB(1,1)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,1)=90.1,87.5,83.8,81.4,83.1,79.7,79.8,79.9,80.0,80.1,5.8,2,  
TAB(1,2)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,2)=94.1,91.4,86.1,82.8,81.2,2.8,7.8,9.8,1.1,81.2,81.4,81.2,81.1,2.8,1.0,  
TAB(1,3)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,3)=93.6,90.0,85.0,82.2,83.9,87.5,85.6,80.8,81.7,81.1,81.2,2.8,1.0,2.8,0.9,  
TAB(1,4)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,4)=88.2,85.4,82.3,80.5,79.6,79.5,79.6,79.8,79.7,80.0,80.1,2.8,0.0,2.7,9.9,  
TAB(1,5)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,5)=82.1,81.0,79.6,78.7,78.3,78.2,79.3,78.4,78.5,78.6,78.7,78.8,78.9,  
TAB(1,6)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,6)=81.6,80.7,79.4,78.5,78.0,2.7,7.9,78.0,78.1,78.2,5.7,8.3,  
TAB(1,7)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,7)=82.1,80.9,79.5,78.6,78.1,77.9,78.0,78.1,2.7,8.2,78.3,4.7,8.4,  
TAB(1,8)=0.0,0.5,1.5,2.5,3.5,4.5,5.5,6.5,7.5,8.5,12.75,20.25,27.75,35.25,45.0,  
TABD(1,8)=83.0,81.9,80.2,79.1,78.5,2.7,8.3,78.5,2.7,8.6,2.7,8.8,3.7,8.9,  
NAKFT=14,  
TAUFT(1)=0.0,2.25,9.75,17.25,21.5,22.5,23.5,24.5,25.5,26.5,27.5,28.5,29.5,30.0,  
TEMAFT(1)=4.79,6.79,5.79,4.79,3.79,2.79,1.79,3.80,2.82,0.84,9.86,9,  
SEND  
CASE END  
ALL DATA CARDS FOR THIS CASE HAVE BEEN TRANSFERED TO DISK
```

Figure 2-1. SAMPLE CASE INPUT DATA (Concluded)

## Section III

## SRB-IIID SAMPLE CASE RESULTS

This section presents the prediction results for the sample case. The first portion of the listing shows the initial motor geometry and case control constants. The time solution results of the internal ballistics simulation follow this portion of the listing. The calculation time intervals used in the simulation were as follows:

- (1) 0.25 second interval during the start transient
- (2) 2.0 second interval during mainstage (steady-state)
- (3) 0.50 second interval during tailoff.

In order to reduce the size of the resulting printed output, the motor performance and increment dividing plane data printouts were suppressed for every other calculation time point during the steady state and tailoff portions of the simulation. A complete listing showing the results of each time point calculation for this sample case is on file with EL-24 at MSFC.

DATE 071076

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• SPACE SHUTTLE SOLID ROCKET BOOSTER PERFORMANCE EVALUATION MODEL •  
• SRB-III D SAMPLE CASE (8 SECTOR THERMAL GRADIENT) 7/76 •

THESE ARE THE INITIAL VALUES FOR CASE 1

## PROGRAM CONSTANTS

## CURVE FIT CONSTANTS

CSCOE(1)= 4735.2300  
CSCOE(2)= .95469550-Q1  
CSCOE(3)= -.35990200-Q4

## INERT MASS CURVE FIT COEFFICIENTS

COEINT(1)= .00000000  
COEINT(2)= 1.7724571  
COEINT(3)= -2.1492405  
COEINT(4)= 1.1124630  
COEINT(5)= .26027876

## GENERAL PROGRAM INDICATORS

LIST= 1  
NCARD = 0  
NCASES = 1  
NF = 1  
NLE4IS = 0  
NPLOT = 1  
NSI = 4  
NTAPE = 0  
NSTAPE = 0  
NSCARD = 1

INERT MASS (SP(5,1))= 190.00000

TOTAL INERT MASS (MITOT)= 7350.0000

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CYLINDRICAL SECTION INITIAL GEOMETRY

SECTOR FUEL RADIUS (RF)

| SECTOR | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 |
| 2      | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 |
| 3      | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 | 72.3840 |
| 4      | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 |
| 5      | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 |
| 6      | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 |
| 7      | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 |
| 8      | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 | 72.3140 |
| 9      | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 |
| 10     | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 |
| 11     | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 | 72.2140 |
| 12     | 72.1800 | 72.1800 | 72.1800 | 72.1800 | 72.1800 | 72.1800 | 72.1800 | 72.1800 |
| 13     | 72.1300 | 72.1300 | 72.1300 | 72.1300 | 72.1300 | 72.1300 | 72.1300 | 72.1300 |
| 14     | 71.3440 | 71.3440 | 71.3440 | 71.3440 | 71.3440 | 71.3440 | 71.3440 | 71.3440 |
| 15     | 71.1390 | 71.1390 | 71.1390 | 71.1390 | 71.1390 | 71.1390 | 71.1390 | 71.1390 |

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## CYLINDRICAL SECTION INITIAL GEOMETRY

SECTOR POINT RADIUS (RI)

[illegible]

## CYLINDRICAL SECTION INITIAL GEOMETRY

## SECTOR PORT AREA (APRTSC)

| SECTOR • | 1 ••     | 2 ••     | 3 ••     | 4 ••     | 5 ••     | 6 ••     | 7 ••     | 8 •      |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1        | 324.0750 | 324.0750 | 324.0750 | 324.0750 | 324.0750 | 324.0750 | 324.0750 | 324.0750 |
| 2        | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 |
| 3        | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 | 332.7750 |
| 4        | 329.8000 | 329.8000 | 329.8000 | 329.8000 | 329.8000 | 329.8000 | 329.8000 | 329.8000 |
| 5        | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 |
| 6        | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 |
| 7        | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 |
| 8        | 329.1250 | 329.1250 | 329.1250 | 329.1250 | 329.1250 | 329.1250 | 329.1250 | 329.1250 |
| 9        | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 | 371.3250 |
| 10       | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 |
| 11       | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 | 381.9000 |
| 12       | 375.2000 | 375.2000 | 375.2000 | 375.2000 | 375.2000 | 375.2000 | 375.2000 | 375.2000 |
| 13       | 391.3125 | 391.3125 | 391.3125 | 391.3125 | 391.3125 | 391.3125 | 391.3125 | 391.3125 |
| 14       | 638.4125 | 638.4125 | 638.4125 | 638.4125 | 638.4125 | 638.4125 | 638.4125 | 638.4125 |
| 15       | 682.2000 | 682.2000 | 682.2000 | 682.2000 | 682.2000 | 682.2000 | 682.2000 | 682.2000 |

SECTOR PORT AREA  
APRTSC

## HEAD END

| DEI          | BE           | AOEH         | NEND         | DELH         | HEI          | HE2          | HEO          | HER |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----|
| 4.2000000+01 | 1.0000000+00 | 9.0000000+01 | 1            | 2.2810000+01 |              |              |              |     |
| RE1          | ALFEM        | ALFE         | RE2          | HE1          | HE2          | HEO          | HER          |     |
| 2.1000000+01 | 1.5707963+00 | 1.2764448+00 | 2.1000000+01 | 0.0000000    | 6.9270798+01 | 6.9270798+01 | 6.9270798+01 |     |
| VFEO         | VCE          | TAUEO        | TAUE1        | CAE          | CBE          | CCCE         | CCVE         |     |
| 0.0000000    | 7.9213087+05 | 8.6248240+01 | 0.0000000    | 0.0000000    | 0.0000000    | 2.0957773+04 | 0.0000000    |     |
| CDCE         | CDVE         | CECE         | CEVE         |              |              |              |              |     |
| 8.6022646+05 | 8.4000000+01 | 9.2423780+06 | 2.0957773+04 |              |              |              |              |     |

## NOZZLE END

| DEI          | BE           | AOEH         | NEND         | DELH         | HEI          | HE2          | HEO          | HER |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----|
| 9.0000000+01 | 1.0000000+00 | 9.0000000+01 | 2            | 2.2810000+01 |              |              |              |     |
| RE1          | ALFEM        | ALFE         | RE2          | HE1          | HE2          | HEO          | HER          |     |
| 4.5000000+01 | 1.5707963+00 | 8.8593657+01 | 1.5000000+01 | 0.0000000    | 5.5097706+01 | 5.5097706+01 | 7.7907706+01 |     |
| VFEO         | VCE          | TAUEO        | TAUE1        | CAE          | CBE          | CCCE         | CCVE         |     |
| 2.8312951+06 | 1.0634843+06 | 6.0983642+01 | 0.0000000    | 0.0000000    | 0.0000000    | 2.0243029+04 | 0.0000000    |     |
| CDCE         | CDVE         | CECE         | CEVE         |              |              |              |              |     |
| 1.8218726+06 | 1.8000000+02 | 4.0992133+07 | 2.0243029+04 |              |              |              |              |     |

IGNITION TIME, TIME (S)

.00000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH   |
|--------------------------------------------|----------------------|---------------|-----------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |           |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | .00000000     | .00000000 |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | .00000000     | .00000000 |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | .00000000     | .00000000 |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT                | .00000000     | .00000000 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | .00000000     | .00000000 |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT                | .00000000     | .00000000 |
| THRUST COEFFICIENT                         | CF                   | .00000000     | .00000000 |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | .00000000     | .00000000 |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | .00000000     | .00000000 |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | WIF                  | .00000000     | .00000000 |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 3337.5326     | 7357.9999 |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 533.79879     | 827389.79 |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 289.46873     | 17664466. |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 506878.30     | 1117475.4 |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 2.3476711     | 5.1757287 |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1591540     | 1.1591540 |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.687001     | 27.970049 |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1546.4052     | 5073.5078 |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .00000000     | .00000000 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |           |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 10189072.     | 14.778000 |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .00000000     | .00000000 |
| BURN AREA (M**2,IN**2)                     | AHH                  | 126.68523     | 196362.50 |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .00000000     | .00000000 |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .00000000     | .00000000 |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 46.396614     | 2831295.1 |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 8.7072178     | 531347.03 |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3284.8275     | 5912.6895 |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |           |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 143.54997     | 222502.90 |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | 248.41008     | 385036.40 |
| PROPELLANT VOLUME (M**3,IN**3)             | VPCYL                | 234.79459     | 14328045. |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 55.645667     | 3395706.9 |
| <b>AFT END PARAMETERS:</b>                 |                      |               |           |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 10189072.     | 14.778000 |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .00000000     | .00000000 |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.153518     | 23488.000 |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .00000000     | .00000000 |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .00000000     | .00000000 |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .00000000     | .00000000 |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .00000000     | .00000000 |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 8.2775321     | 505126.00 |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 8.7718971     | 535294.00 |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3284.8275     | 5912.6895 |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 5.1281238     | 7948.6079 |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |           |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5011842     | 2326.8401 |
| EXPANSION RATIO                            | EPR                  | 7.1600242     | 7.1600242 |
| PRESSURE RATIO                             | PEPO                 | 1.0000000     | 1.0000000 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |           |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .00000000     | .00000000 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 1.0000000     | 1.0000000 |

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## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO    | P     | PSIA  | DEG. R  | FT/SEC | U   | M    | LP     | AP      | WDOT   | LB/SEC | DWDOT | LB/SEC | OW/DT  | R8     | TAU   | RBTO   | TAUTO |
|-----------------------------|-------|-------|-------|---------|--------|-----|------|--------|---------|--------|--------|-------|--------|--------|--------|-------|--------|-------|
|                             | PSIA  |       |       |         |        |     |      | INCHES | SQ. IN. | LB/SEC | LB/SEC |       | LB/SEC | IN/SEC | IN/SEC | IN.   | IN/SEC | IN.   |
| FORE                        | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 180.50 | 2592.60 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 15.000                      | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 180.81 | 2601.49 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 30.000                      | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 181.12 | 2610.39 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 45.000                      | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 181.42 | 2619.31 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 60.000                      | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 181.73 | 2628.25 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 75.000                      | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 182.04 | 2637.20 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 90.000                      | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 182.35 | 2646.17 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 105.000                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 182.66 | 2655.15 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 116.761                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 182.90 | 2662.20 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 116.771                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 248.50 | 2662.20 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 131.771                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 211.81 | 2649.34 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 143.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 182.10 | 2638.40 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 158.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 183.07 | 2657.09 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 173.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 184.04 | 2675.85 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 188.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 185.01 | 2694.68 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 203.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 185.98 | 2713.57 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 218.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 186.95 | 2732.53 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 233.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 187.92 | 2751.55 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 248.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 188.90 | 2770.64 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 263.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 189.87 | 2789.79 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 278.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 190.84 | 2809.01 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 293.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 191.81 | 2828.30 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 308.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 192.78 | 2847.65 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 323.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 193.75 | 2867.07 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 338.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 194.72 | 2886.56 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 353.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 195.69 | 2906.11 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 368.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 196.66 | 2925.72 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 383.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 197.63 | 2945.40 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 398.919                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 198.60 | 2965.15 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 403.048                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 198.87 | 2976.60 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 418.048                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 197.04 | 3023.33 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 427.051                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 195.94 | 3055.20 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 427.061                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 369.90 | 3055.20 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 442.061                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 291.88 | 2876.17 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 457.061                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 213.85 | 2702.54 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 463.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 181.90 | 2633.00 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 478.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 182.55 | 2651.71 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 493.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 183.19 | 2670.48 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 508.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 183.84 | 2689.32 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 523.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 184.48 | 2708.23 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 538.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 185.13 | 2727.20 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 553.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 185.77 | 2746.24 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 568.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 186.42 | 2765.35 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 583.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 187.06 | 2784.52 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 598.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 187.71 | 2803.76 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |
| 613.204                     | 14.78 | 14.78 | 14.78 | 5912.69 | .00    | .00 | .000 | 188.35 | 2823.06 | .00    | .00    | .00   | .00    | .0000  | .0000  | .0000 | .0000  | .0000 |

|          |       |       |         |     |      |        |         |     |     |       |      |       |      |
|----------|-------|-------|---------|-----|------|--------|---------|-----|-----|-------|------|-------|------|
| 628.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 189.00 | 2842.43 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 643.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 189.64 | 2841.87 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 658.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 190.29 | 2841.37 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 673.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 190.93 | 2840.94 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 688.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 191.58 | 2840.58 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 703.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 192.22 | 2840.28 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 718.204  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 192.87 | 2840.05 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 726.191  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 193.21 | 2840.00 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 741.191  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 195.24 | 3033.48 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 746.336  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 195.94 | 3055.20 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 746.346  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 349.40 | 3055.20 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 761.346  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 301.39 | 3038.57 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 776.346  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 253.37 | 3021.98 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 791.346  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 205.36 | 3005.44 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 809.831  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 194.20 | 3001.60 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 824.631  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 195.24 | 3033.60 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 839.831  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 196.27 | 3065.76 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 854.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 197.31 | 3098.10 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 869.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 198.34 | 3130.50 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 884.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 202.78 | 3272.07 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 899.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 207.21 | 3416.76 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 914.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 211.65 | 3564.59 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 929.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 216.08 | 3715.35 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 944.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 220.52 | 3869.64 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 959.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 224.95 | 4026.86 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 974.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 229.39 | 4187.21 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 989.781  | 14.78 | 14.78 | 5912.69 | .00 | .000 | 233.82 | 4350.68 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1004.781 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 238.26 | 4517.29 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1019.781 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 242.69 | 4687.03 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1034.781 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 247.13 | 4859.90 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1049.791 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 251.56 | 5035.90 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1055.791 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 253.34 | 5107.30 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1070.791 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 256.29 | 5227.11 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| 1084.171 | 14.78 | 14.78 | 5912.69 | .00 | .000 | 259.25 | 5348.31 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| AF1(A)   | 14.78 | 14.78 | 5912.69 | .00 | .000 | 261.88 | 5457.60 | .00 | .00 | .0000 | .000 | .0000 | .000 |
| AF1(B)   | 14.78 | 14.78 | 5912.69 | .00 | .000 | .....  | 5457.60 | .00 | .00 | .0000 | .000 | .0000 | .000 |
|          |       |       |         |     |      | .....  | 2538.00 | .00 | .00 | .0000 | .000 | .0000 | .000 |





IGNITION TIME, TIME (S)

.25000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 4664889.2     | 1048708.8    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 5759738.9     | 1294840.8    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 33126.393     | 7447.1094    |
| DELIVERED TOTAL IMPULSE (N.S,LBF.S)        | SRMDT1               | 583111.15     | 131088.60    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.10144     | 257.10144    |
| VACUUM TOTAL IMPULSE (N.S,LBF.S)           | SRMVT1               | 719967.36     | 161855.10    |
| THRUST COEFFICIENT                         | CF                   | 1.6341994     | 1.6341994    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 2266.6500     | 4997.1078    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 283.33125     | 624.63847    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 17.778695     | 39.195312    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 3333.0880     | 7348.2011    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 285.30871     | 442353.39    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 289.46873     | 17664466.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 506515.00     | 1116674.4    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 178.42708     | 393.36437    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1595347     | 1.1595347    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.800267     | 28.219625    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1554.5711     | 5100.2988    |
| MAXIMUM CHAMBER MACH NUMBER                | ANPN                 | .40588777     | .40588777    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .27923767+09  | 405.00000    |
| PRESSURE INTEGRAL (N.S/M**2,LBF.S/IN**2)   | SPHDT                | 36178342.     | 52.472250    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 126.68523     | 196362.50    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .60231337-02  | .23713125    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFM                  | 46.396614     | 2831295.1    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 8.7072178     | 531347.03    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3345.9318     | 6022.6772    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 143.54997     | 222502.90    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 234.79459     | 14328045.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 55.645667     | 3395706.9    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .23478013+09  | 340.51979    |
| PRESSURE INTEGRAL (N.S/M**2,LBF.S/IN**2)   | SPONDY               | 30621150.     | 44.412223    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.153518     | 23488.000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(N1+1,1)          | .56213406-02  | .22131262    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1+2,1)          | .56213406-02  | .22131262    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1+1,1)         | .00000000     | .00000000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1+2,1)         | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 8.2775321     | 505126.00    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 8.7718971     | 535294.00    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(N1+2,3)         | 3351.6451     | 6032.9612    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 5.1281238     | 7948.6079    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5011926     | 2326.8532    |
| EXPANSION RATIO                            | EPR                  | 7.1599839     | 7.1599839    |
| PRESSURE RATIO                             | PEPO                 | .21626636-01  | .21626636-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .28998767-01  | .28998767-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 5.0000000     | 5.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U       | H    | LP     | AP      | WDOT    | LB/SEC  | DW/DT  | RB     | TAU  | R8TO   | TAUTO |
|-----------------------------|--------|--------|---------|---------|------|--------|---------|---------|---------|--------|--------|------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC  |      | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FORE                        | 405.00 | 375.23 | 6022.68 | 917.72  | .262 | 180.50 | 2592.60 | 2706.02 | 2915.51 | 209.49 | .2340  | .000 | .0000  | .000  |
| 15.000                      | 369.65 | 374.27 | 6022.11 | 925.66  | .264 | 180.81 | 2601.49 | 2732.09 | 40.23   | 14.17  | .2309  | .000 | .0000  | .000  |
| 30.000                      | 388.92 | 373.32 | 6021.54 | 933.42  | .266 | 181.12 | 2610.39 | 2757.65 | 39.75   | 14.18  | .2307  | .000 | .0000  | .000  |
| 45.000                      | 368.19 | 372.37 | 6020.97 | 941.20  | .266 | 181.42 | 2619.31 | 2783.24 | 39.78   | 14.19  | .2305  | .000 | .0000  | .000  |
| 60.000                      | 387.45 | 371.40 | 6020.40 | 948.99  | .271 | 181.73 | 2628.25 | 2808.85 | 39.81   | 14.20  | .2303  | .000 | .0000  | .000  |
| 75.000                      | 386.71 | 370.43 | 6019.82 | 956.81  | .273 | 182.04 | 2637.20 | 2834.47 | 39.84   | 14.22  | .2301  | .000 | .0000  | .000  |
| 90.000                      | 385.97 | 369.45 | 6019.23 | 964.65  | .275 | 182.35 | 2646.17 | 2860.12 | 39.87   | 14.23  | .2298  | .000 | .0000  | .000  |
| 105.000                     | 385.22 | 368.47 | 6018.64 | 972.51  | .277 | 182.66 | 2655.15 | 2885.79 | 39.90   | 14.24  | .2296  | .000 | .0000  | .000  |
| 116.761                     | 384.62 | 367.69 | 6018.16 | 978.68  | .279 | 182.90 | 2662.20 | 2905.92 | 31.31   | 11.17  | .2294  | .000 | .0000  | .000  |
| 116.771                     | 384.62 | 367.69 | 6018.17 | 978.66  | .279 | 248.50 | 2662.20 | 2905.87 | .00     | .06    | .2292  | .000 | .0000  | .000  |
| 131.771                     | 384.03 | 366.44 | 6016.61 | 998.86  | .285 | 211.81 | 2649.04 | 2941.89 | 50.22   | 14.19  | .2292  | .000 | .0000  | .000  |
| 143.919                     | 383.62 | 365.55 | 6015.49 | 1013.14 | .289 | 182.10 | 2630.40 | 2965.26 | 34.78   | 11.41  | .2290  | .000 | .0000  | .000  |
| 156.919                     | 383.08 | 364.92 | 6015.23 | 1016.42 | .290 | 183.07 | 2657.09 | 2990.96 | 39.77   | 14.08  | .2288  | .000 | .0000  | .000  |
| 173.919                     | 382.55 | 364.30 | 6014.96 | 1019.71 | .291 | 184.04 | 2675.85 | 3016.76 | 39.96   | 14.15  | .2286  | .000 | .0000  | .000  |
| 186.919                     | 382.01 | 363.67 | 6014.70 | 1023.00 | .292 | 185.01 | 2694.68 | 3042.67 | 40.14   | 14.23  | .2285  | .000 | .0000  | .000  |
| 203.919                     | 381.47 | 363.04 | 6014.44 | 1026.29 | .293 | 185.98 | 2713.57 | 3068.69 | 40.33   | 14.30  | .2284  | .000 | .0000  | .000  |
| 210.919                     | 380.93 | 362.41 | 6014.17 | 1029.59 | .294 | 186.95 | 2732.53 | 3094.83 | 40.52   | 14.38  | .2282  | .000 | .0000  | .000  |
| 233.919                     | 380.39 | 361.78 | 6013.91 | 1032.89 | .295 | 187.92 | 2751.55 | 3121.08 | 40.70   | 14.45  | .2281  | .000 | .0000  | .000  |
| 246.919                     | 379.85 | 361.15 | 6013.64 | 1036.20 | .296 | 188.90 | 2770.64 | 3147.44 | 40.89   | 14.53  | .2279  | .000 | .0000  | .000  |
| 263.919                     | 379.31 | 360.52 | 6013.37 | 1039.51 | .297 | 189.87 | 2789.79 | 3173.91 | 41.07   | 14.60  | .2278  | .000 | .0000  | .000  |
| 278.919                     | 378.77 | 359.89 | 6013.10 | 1042.83 | .297 | 190.84 | 2809.01 | 3200.49 | 41.26   | 14.68  | .2277  | .000 | .0000  | .000  |
| 293.919                     | 378.22 | 359.26 | 6012.83 | 1046.15 | .298 | 191.81 | 2828.30 | 3227.18 | 41.44   | 14.75  | .2275  | .000 | .0000  | .000  |
| 308.919                     | 377.68 | 358.62 | 6012.56 | 1049.48 | .299 | 192.78 | 2847.65 | 3253.98 | 41.63   | 14.83  | .2274  | .000 | .0000  | .000  |
| 323.919                     | 377.13 | 357.98 | 6012.29 | 1052.81 | .300 | 193.75 | 2867.07 | 3280.89 | 41.81   | 14.90  | .2272  | .000 | .0000  | .000  |
| 336.919                     | 376.59 | 357.35 | 6012.01 | 1056.15 | .301 | 194.72 | 2886.56 | 3307.92 | 42.00   | 14.98  | .2271  | .000 | .0000  | .000  |
| 353.919                     | 376.04 | 356.71 | 6011.74 | 1059.49 | .302 | 195.69 | 2906.11 | 3335.05 | 42.18   | 15.05  | .2270  | .000 | .0000  | .000  |
| 368.919                     | 375.49 | 356.07 | 6011.46 | 1062.84 | .303 | 196.66 | 2925.72 | 3362.29 | 42.36   | 15.12  | .2268  | .000 | .0000  | .000  |
| 383.919                     | 374.95 | 355.43 | 6011.18 | 1066.19 | .304 | 197.63 | 2945.40 | 3389.63 | 42.55   | 15.20  | .2267  | .000 | .0000  | .000  |
| 398.919                     | 374.40 | 354.79 | 6010.90 | 1069.54 | .305 | 198.60 | 2965.15 | 3417.09 | 42.73   | 15.27  | .2265  | .000 | .0000  | .000  |
| 403.048                     | 374.13 | 354.50 | 6010.79 | 1070.82 | .306 | 198.87 | 2970.60 | 3424.67 | 11.79   | 4.22   | .2264  | .000 | .0000  | .000  |
| 418.048                     | 373.55 | 354.28 | 6011.59 | 1061.29 | .303 | 197.04 | 3023.33 | 3451.86 | 42.65   | 15.45  | .2263  | .000 | .0000  | .000  |
| 427.051                     | 373.21 | 354.16 | 6012.06 | 1055.52 | .301 | 195.94 | 3055.20 | 3467.86 | 25.40   | 9.40   | .2263  | .000 | .0000  | .000  |
| 427.061                     | 373.21 | 354.16 | 6012.07 | 1055.49 | .301 | 369.90 | 3055.20 | 3467.80 | .00     | .06    | .2263  | .000 | .0000  | .000  |
| 442.061                     | 372.53 | 350.01 | 6003.82 | 1151.23 | .329 | 291.88 | 2876.17 | 3523.86 | 71.25   | 15.20  | .2263  | .000 | .0000  | .000  |
| 457.061                     | 372.04 | 345.52 | 5994.24 | 1253.26 | .350 | 213.85 | 2702.54 | 3564.08 | 54.36   | 14.13  | .2253  | .000 | .0000  | .000  |
| 463.204                     | 371.94 | 343.61 | 5989.90 | 1296.91 | .371 | 181.90 | 2633.00 | 3575.94 | 17.34   | 5.49   | .2243  | .000 | .0000  | .000  |
| 478.204                     | 371.21 | 342.80 | 5989.59 | 1305.00 | .372 | 182.55 | 2651.71 | 3601.50 | 38.86   | 13.22  | .2239  | .000 | .0000  | .000  |
| 493.204                     | 370.48 | 342.00 | 5989.28 | 1303.04 | .372 | 183.19 | 2670.48 | 3627.24 | 38.95   | 13.29  | .2237  | .000 | .0000  | .000  |
| 508.204                     | 369.75 | 341.20 | 5988.97 | 1306.08 | .373 | 183.84 | 2689.32 | 3652.94 | 39.05   | 13.35  | .2235  | .000 | .0000  | .000  |
| 523.204                     | 369.02 | 340.40 | 5988.66 | 1309.11 | .374 | 184.48 | 2708.23 | 3678.69 | 39.16   | 13.41  | .2233  | .000 | .0000  | .000  |
| 538.204                     | 368.29 | 339.60 | 5988.35 | 1312.13 | .375 | 185.13 | 2727.20 | 3704.49 | 39.26   | 13.47  | .2231  | .000 | .0000  | .000  |
| 553.204                     | 367.56 | 338.80 | 5988.04 | 1315.14 | .376 | 185.77 | 2746.24 | 3730.32 | 39.37   | 13.53  | .2230  | .000 | .0000  | .000  |
| 568.204                     | 366.83 | 338.00 | 5987.73 | 1318.15 | .377 | 186.42 | 2765.35 | 3756.20 | 39.47   | 13.59  | .2228  | .000 | .0000  | .000  |
| 583.204                     | 366.11 | 337.21 | 5987.42 | 1321.15 | .378 | 187.06 | 2784.52 | 3782.12 | 39.58   | 13.66  | .2226  | .000 | .0000  | .000  |
| 598.204                     | 365.38 | 336.41 | 5987.11 | 1324.14 | .379 | 187.71 | 2803.76 | 3808.08 | 39.60   | 13.72  | .2224  | .000 | .0000  | .000  |
| 613.204                     | 364.66 | 335.62 | 5986.80 | 1327.13 | .379 | 188.35 | 2823.06 | 3834.09 | 39.78   | 13.78  | .2222  | .000 | .0000  | .000  |

|          |        |        |         |         |      |        |         |         |        |       |       |       |       |
|----------|--------|--------|---------|---------|------|--------|---------|---------|--------|-------|-------|-------|-------|
| 628-204  | 363-93 | 334-83 | 5986-50 | 1330-11 | -380 | 189-00 | 2842-43 | 3860-14 | 39-89  | 13-84 | -2220 | -0000 | -0000 |
| 643-234  | 363-21 | 334-03 | 5986-19 | 1333-09 | -381 | 189-04 | 2881-87 | 3866-23 | 39-99  | 13-90 | -2217 | -0000 | -0000 |
| 658-204  | 362-49 | 333-24 | 5985-88 | 1336-06 | -382 | 190-29 | 2881-37 | 3912-36 | 40-07  | 13-96 | -2217 | -0000 | -0000 |
| 673-204  | 361-76 | 332-46 | 5985-57 | 1339-03 | -383 | 190-93 | 2900-94 | 3938-53 | 40-20  | 14-02 | -2215 | -0000 | -0000 |
| 688-204  | 361-04 | 331-67 | 5985-26 | 1341-99 | -384 | 191-58 | 2920-58 | 3964-75 | 40-30  | 14-08 | -2213 | -0000 | -0000 |
| 703-204  | 360-32 | 330-88 | 5984-95 | 1344-95 | -385 | 192-22 | 2940-28 | 3991-01 | 40-40  | 14-14 | -2211 | -0000 | -0000 |
| 718-204  | 359-60 | 330-09 | 5984-64 | 1347-90 | -385 | 192-87 | 2960-05 | 4017-30 | 40-50  | 14-20 | -2209 | -0000 | -0000 |
| 726-191  | 358-94 | 329-37 | 5984-34 | 1350-70 | -386 | 193-21 | 2970-60 | 4031-32 | 21-60  | 7-58  | -2208 | -0000 | -0000 |
| 741-191  | 358-09 | 329-38 | 5986-32 | 1331-77 | -381 | 195-24 | 3033-48 | 4057-71 | 40-79  | 14-40 | -2206 | -0000 | -0000 |
| 746-336  | 357-81 | 329-39 | 5986-99 | 1325-36 | -379 | 195-94 | 3055-29 | 4066-77 | 14-08  | 5-01  | -2206 | -0000 | -0000 |
| 746-346  | 357-81 | 329-39 | 5986-99 | 1325-33 | -379 | 349-40 | 3055-20 | 4066-74 | -00    | -05   | -2206 | -0000 | -0000 |
| 761-346  | 356-94 | 327-21 | 5983-53 | 1358-39 | -388 | 301-39 | 3038-57 | 4120-48 | 68-31  | 14-57 | -2206 | -0000 | -0000 |
| 776-346  | 356-20 | 325-29 | 5980-38 | 1387-80 | -397 | 253-37 | 3021-90 | 4164-25 | 58-17  | 14-40 | -2201 | -0000 | -0000 |
| 791-346  | 355-60 | 323-64 | 5977-59 | 1413-24 | -404 | 205-36 | 3005-44 | 4198-00 | 48-00  | 14-25 | -2196 | -0000 | -0000 |
| 794-831  | 355-48 | 323-30 | 5977-00 | 1418-58 | -406 | 194-20 | 3001-60 | 4204-41 | 9-69   | 3-29  | -2192 | -0000 | -0000 |
| 809-831  | 354-67 | 322-71 | 5977-39 | 1415-10 | -405 | 195-24 | 3033-60 | 4230-82 | 40-62  | 14-20 | -2191 | -0000 | -0000 |
| 824-831  | 353-87 | 322-13 | 5977-77 | 1411-65 | -404 | 196-27 | 3065-76 | 4257-31 | 40-82  | 14-33 | -2190 | -0000 | -0000 |
| 839-831  | 353-08 | 321-56 | 5978-15 | 1408-23 | -403 | 197-31 | 3098-10 | 4283-87 | 41-01  | 14-45 | -2189 | -0000 | -0000 |
| 854-781  | 352-29 | 320-99 | 5978-52 | 1404-85 | -402 | 198-34 | 3130-50 | 4310-41 | 41-06  | 14-52 | -2187 | -0000 | -0000 |
| 869-781  | 351-74 | 322-97 | 5984-88 | 1345-57 | -385 | 202-78 | 3272-07 | 4337-14 | 41-74  | 15-01 | -2186 | -0000 | -0000 |
| 884-781  | 351-22 | 324-71 | 5993-51 | 1290-87 | -369 | 207-21 | 3416-76 | 4364-08 | 42-70  | 15-76 | -2191 | -0000 | -0000 |
| 899-781  | 350-73 | 326-22 | 5995-51 | 1240-29 | -354 | 211-65 | 3564-59 | 4391-27 | 43-71  | 16-52 | -2195 | -0000 | -0000 |
| 914-781  | 349-92 | 327-19 | 5999-84 | 1194-66 | -341 | 216-08 | 3715-55 | 4418-70 | 44-71  | 17-28 | -2198 | -0000 | -0000 |
| 929-781  | 349-19 | 328-05 | 6003-75 | 1151-97 | -329 | 220-52 | 3869-64 | 4446-36 | 45-70  | 18-04 | -2201 | -0000 | -0000 |
| 944-781  | 348-52 | 328-83 | 6007-29 | 1111-95 | -317 | 224-95 | 4026-86 | 4474-21 | 46-67  | 18-82 | -2203 | -0000 | -0000 |
| 959-781  | 347-91 | 329-53 | 6013-50 | 1074-36 | -307 | 229-39 | 4187-21 | 4502-24 | 47-64  | 19-61 | -2205 | -0000 | -0000 |
| 974-781  | 347-34 | 330-15 | 6013-42 | 1038-99 | -296 | 233-82 | 4350-68 | 4530-43 | 48-61  | 20-42 | -2206 | -0000 | -0000 |
| 989-781  | 346-82 | 330-72 | 6016-08 | 1005-64 | -287 | 238-26 | 4517-29 | 4558-77 | 49-58  | 21-24 | -2208 | -0000 | -0000 |
| 1004-781 | 346-34 | 331-23 | 6018-51 | 974-17  | -278 | 242-69 | 4687-03 | 4587-24 | 50-54  | 22-07 | -2209 | -0000 | -0000 |
| 1019-781 | 345-89 | 331-69 | 6020-74 | 944-40  | -269 | 247-13 | 4859-90 | 4615-82 | 51-50  | 22-92 | -2210 | -0000 | -0000 |
| 1034-781 | 345-47 | 332-11 | 6022-78 | 916-22  | -261 | 251-56 | 5035-90 | 4644-50 | 52-46  | 23-78 | -2211 | -0000 | -0000 |
| 1040-791 | 345-31 | 332-27 | 6023-56 | 905-32  | -258 | 253-34 | 5107-30 | 4656-02 | 21-29  | 9-77  | -2212 | -0000 | -0000 |
| 1055-791 | 344-96 | 332-36 | 6024-64 | 889-97  | -254 | 256-29 | 5227-11 | 4684-82 | 53-66  | 24-86 | -2213 | -0000 | -0000 |
| 1070-791 | 344-61 | 332-44 | 6025-66 | 875-10  | -249 | 259-25 | 5348-31 | 4713-66 | 54-28  | 25-44 | -2213 | -0000 | -0000 |
| 1084-791 | 344-23 | 332-50 | 6026-53 | 862-23  | -246 | 261-88 | 5457-60 | 4739-42 | 48-95  | 23-19 | -2213 | -0000 | -0000 |
| AF11A    | 343-53 | 326-90 | 5996-59 | 930-96  | -266 | .....  | 7948-61 | 4997-11 | 130-30 | 57-16 | -2213 | -0000 | ..... |
| AF11B    | 340-53 | 340-45 | 6032-96 | -70-71  | -020 | .....  | 2538-00 | 184-55  | 199-53 | 14-98 | -2213 | -0000 | ..... |

| SLOT                                   |  | INTERFACE |           | PO        |           | P         |           | T      |        | U      |        | AP      |        | OWDOT  |        | AB      |        | RB     |        | DELTA  |           | WSLOT     |  |
|----------------------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|---------|--------|--------|--------|---------|--------|--------|--------|--------|-----------|-----------|--|
| LOCATION                               |  | IN.       |           | PSIA      |           | PSIA      |           | DEG. R |        | FT/SEC |        | SQ. IN. |        | LB/SEC |        | SQ. IN. |        | IN/SEC |        | IN.    |           | TAU.      |  |
| GAS BUILDUP IN SLOT, DN/DI = 5.8738-02 |  |           |           |           |           |           |           |        |        |        |        |         |        |        |        |         |        |        |        |        |           |           |  |
| FORWARD                                |  | 1.1676+02 | 3.8462+02 | 3.6769+02 | 6.0182+03 | 1.5820+02 | 1.6460+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2.9059+03 | 2.9059+03 |  |
| AFT                                    |  | 1.1677+02 | 3.8462+02 | 3.6769+02 | 6.0182+03 | 1.5820+02 | 1.6460+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2.9059+03 | 2.9059+03 |  |
| GAS BUILDUP IN SLOT, DN/DI = 5.6289-02 |  |           |           |           |           |           |           |        |        |        |        |         |        |        |        |         |        |        |        |        |           |           |  |
| FORWARD                                |  | 4.2705+02 | 3.7321+02 | 3.5416+02 | 6.0121+03 | 1.9684+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.4679+03 | 3.4679+03 |  |
| AFT                                    |  | 4.2706+02 | 3.7321+02 | 3.5416+02 | 6.0121+03 | 1.9684+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.4679+03 | 3.4679+03 |  |
| GAS BUILDUP IN SLOT, DN/DI = 5.2401-02 |  |           |           |           |           |           |           |        |        |        |        |         |        |        |        |         |        |        |        |        |           |           |  |
| FORWARD                                |  | 7.4634+02 | 3.5781+02 | 3.2939+02 | 5.9870+03 | 2.4716+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.0668+03 | 4.0668+03 |  |
| AFT                                    |  | 7.4635+02 | 3.5781+02 | 3.2939+02 | 5.9870+03 | 2.4716+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.0667+03 | 4.0667+03 |  |
| GAS BUILDUP IN SLOT, DN/DI = 5.2401-02 |  |           |           |           |           |           |           |        |        |        |        |         |        |        |        |         |        |        |        |        |           |           |  |

IGNITION TIME, TIME (S) .50000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10596360.     | 2302156.5    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 11690885.     | 2628215.6    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 92779.857     | 20057.742    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | 2490767.2     | 559946.76    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.79596     | 257.79596    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | 2901295.4     | 652237.15    |
| THRUST COEFFICIENT                         | CF                   | 1.6375851     | 1.6375851    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4574.5549     | 10085.167    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 1138.4819     | 2509.9229    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | HIF                  | 49.794276     | 109.77759    |
| INERT MASS REMAINING (KG,LBM)              | HIR                  | 3320.6394     | 7320.7567    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 285.74817     | 442910.54    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 209.05111     | 17638981.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 505493.34     | 1114422.0    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 358.30218     | 789.92110    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1599295     | 1.1599295    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.885062     | 28.406700    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1560.7701     | 5120.6368    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .39722908     | .39722908    |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .55047534+09  | 810.00000    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .14089247+09  | 234.34725    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 126.79689     | 196535.57    |
| BURN RATE (M/S,IN/S)                       | RBZ(I)               | .10870246-01  | .42796243    |
| DISTANCE BURNED (M,IN)                     | TAUZ(I)              | .15057834-02  | .59282812-01 |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 46.205770     | 2819649.1    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 8.8980620     | 542993.06    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(I,3)            | 3408.0481     | 6135.9265    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 143.78320     | 222864.40    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 234.58912     | 14315506.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 55.851216     | 3408250.3    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .47552204+09  | 689.68641    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .11940892+09  | 173.18800    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.168082     | 23510.574    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .10189071-01  | .40114453    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .10189071-01  | .40114453    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .14053351-02  | .55328156-01 |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .14053351-02  | .55328156-01 |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 8.2562261     | 503825.83    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 8.7932030     | 536594.17    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3409.3778     | 6136.8801    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 5.1397368     | 7966.6080    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5013186     | 2327.0486    |
| EXPANSION RATIO                            | EPR                  | 7.1593828     | 7.1593828    |
| PRESSURE RATIO                             | PEPO                 | .21607906-01  | .21607906-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .41061602-01  | .41061602-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 4.0000000     | 4.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U       | H    | LP     | AP      | WDOT<br>LB/SEC | DWDOT<br>LB/SEC | OW/DT<br>LB/SEC | RB<br>IN/SEC | TAU<br>IN. | RBTO<br>IN/SEC | TAUTO<br>IN. |
|-----------------------------|--------|--------|---------|---------|------|--------|---------|----------------|-----------------|-----------------|--------------|------------|----------------|--------------|
| PSIA                        | PSIA   | DEG. R | FT/SEC  |         |      | INCHES | SQ. IN. |                |                 |                 |              |            |                |              |
| FORE                        | 810.00 | 758.92 | 6135.93 | 850.38  | .241 | 180.87 | 2603.31 | 5031.57        | 5276.62         | 245.04          | .4231        | .059       | .0000          | .000         |
| 15.0003                     | 783.73 | 757.34 | 6135.35 | 858.94  | .243 | 181.18 | 2612.17 | 5089.38        | 72.90           | 15.09           | .4183        | .058       | .0000          | .000         |
| 30.0003                     | 782.63 | 755.76 | 6134.78 | 867.35  | .246 | 181.49 | 2621.05 | 5146.43        | 72.17           | 15.12           | .4180        | .058       | .0000          | .000         |
| 45.0003                     | 781.52 | 754.17 | 6134.20 | 875.77  | .248 | 181.79 | 2629.94 | 5203.52        | 72.24           | 15.15           | .4177        | .058       | .0000          | .000         |
| 60.0003                     | 780.40 | 752.57 | 6133.62 | 884.19  | .251 | 182.10 | 2638.85 | 5260.66        | 72.31           | 15.17           | .4174        | .058       | .0000          | .000         |
| 75.0003                     | 779.28 | 750.95 | 6133.03 | 892.62  | .253 | 182.41 | 2647.78 | 5317.83        | 72.37           | 15.20           | .4171        | .058       | .0000          | .000         |
| 90.0003                     | 778.12 | 749.32 | 6132.43 | 901.06  | .255 | 182.71 | 2656.72 | 5375.05        | 72.44           | 15.23           | .4168        | .057       | .0000          | .000         |
| 105.0003                    | 776.97 | 747.68 | 6131.83 | 909.50  | .258 | 183.02 | 2665.67 | 5432.31        | 72.51           | 15.25           | .4165        | .057       | .0000          | .000         |
| 116.761                     | 776.05 | 746.38 | 6131.35 | 916.13  | .260 | 183.26 | 2672.70 | 5477.22        | 56.89           | 11.98           | .4161        | .057       | .0000          | .000         |
| 116.771                     | 776.05 | 746.38 | 6131.45 | 914.75  | .259 | 248.12 | 2676.43 | 5477.16        | .00             | .06             | .4159        | .057       | .0000          | .000         |
| 131.771                     | 775.24 | 744.38 | 6129.97 | 935.10  | .265 | 211.84 | 2661.17 | 5552.91        | 91.03           | 15.28           | .4159        | .057       | .0000          | .000         |
| 143.719                     | 774.69 | 742.89 | 6128.88 | 949.81  | .269 | 182.46 | 2648.83 | 5603.81        | 63.17           | 12.27           | .4155        | .057       | .0000          | .000         |
| 158.919                     | 773.22 | 741.14 | 6128.49 | 954.95  | .271 | 183.43 | 2667.58 | 5661.00        | 72.32           | 15.13           | .4152        | .057       | .0000          | .000         |
| 173.919                     | 771.74 | 739.39 | 6128.11 | 960.10  | .272 | 184.40 | 2686.39 | 5718.45        | 72.65           | 15.19           | .4149        | .057       | .0000          | .000         |
| 189.919                     | 770.26 | 737.63 | 6127.71 | 965.26  | .274 | 185.37 | 2705.26 | 5776.17        | 72.97           | 15.26           | .4145        | .057       | .0000          | .000         |
| 203.919                     | 768.77 | 735.86 | 6127.32 | 970.43  | .275 | 186.34 | 2724.21 | 5834.15        | 73.29           | 15.32           | .4142        | .057       | .0000          | .000         |
| 218.919                     | 767.28 | 734.08 | 6126.92 | 975.62  | .277 | 187.31 | 2743.21 | 5892.38        | 73.61           | 15.38           | .4138        | .057       | .0000          | .000         |
| 233.919                     | 765.78 | 732.30 | 6126.52 | 980.81  | .278 | 188.28 | 2762.21 | 5950.88        | 73.93           | 15.44           | .4135        | .057       | .0000          | .000         |
| 248.919                     | 764.28 | 730.52 | 6126.12 | 986.02  | .280 | 189.25 | 2781.42 | 6009.64        | 74.25           | 15.50           | .4131        | .057       | .0000          | .000         |
| 263.919                     | 762.77 | 728.72 | 6125.71 | 991.25  | .281 | 190.22 | 2800.63 | 6068.65        | 74.57           | 15.56           | .4128        | .057       | .0000          | .000         |
| 278.919                     | 761.25 | 726.92 | 6125.30 | 996.46  | .283 | 191.19 | 2819.92 | 6127.92        | 74.89           | 15.61           | .4124        | .057       | .0000          | .000         |
| 293.919                     | 759.73 | 725.12 | 6124.89 | 1001.74 | .284 | 192.17 | 2839.23 | 6187.46        | 75.20           | 15.67           | .4121        | .057       | .0000          | .000         |
| 308.919                     | 758.21 | 723.30 | 6124.47 | 1007.00 | .286 | 193.14 | 2858.63 | 6247.25        | 75.52           | 15.73           | .4117        | .057       | .0000          | .000         |
| 323.919                     | 756.68 | 721.48 | 6124.05 | 1012.28 | .287 | 194.11 | 2878.09 | 6307.29        | 75.83           | 15.79           | .4113        | .057       | .0000          | .000         |
| 338.919                     | 755.14 | 719.66 | 6123.63 | 1017.58 | .289 | 195.08 | 2897.63 | 6367.60        | 76.15           | 15.84           | .4110        | .057       | .0000          | .000         |
| 353.919                     | 753.60 | 717.82 | 6123.20 | 1022.89 | .290 | 196.05 | 2917.22 | 6428.16        | 76.46           | 15.90           | .4106        | .057       | .0000          | .000         |
| 368.919                     | 752.05 | 715.98 | 6122.77 | 1028.22 | .292 | 197.02 | 2936.89 | 6488.97        | 76.77           | 15.95           | .4102        | .057       | .0000          | .000         |
| 383.919                     | 750.50 | 714.14 | 6122.34 | 1033.56 | .293 | 197.99 | 2956.61 | 6550.04        | 77.08           | 16.01           | .4099        | .057       | .0000          | .000         |
| 398.919                     | 748.94 | 712.29 | 6121.90 | 1038.92 | .295 | 198.96 | 2976.41 | 6611.37        | 77.39           | 16.06           | .4095        | .057       | .0000          | .000         |
| 403.048                     | 748.51 | 711.78 | 6121.78 | 1040.40 | .295 | 199.23 | 2981.87 | 6628.29        | 21.35           | 4.43            | .4091        | .057       | .0000          | .000         |
| 418.048                     | 747.50 | 711.36 | 6122.43 | 1032.48 | .293 | 197.39 | 3034.49 | 6689.25        | 77.21           | 16.25           | .4090        | .057       | .0000          | .000         |
| 427.051                     | 746.91 | 711.13 | 6122.82 | 1027.68 | .291 | 196.30 | 3066.29 | 6725.36        | 45.99           | 9.88            | .4089        | .057       | .0000          | .000         |
| 427.061                     | 746.91 | 711.13 | 6123.11 | 1024.08 | .290 | 370.11 | 3076.13 | 6725.30        | .00             | .06             | .4089        | .057       | .0000          | .000         |
| 442.061                     | 745.73 | 703.62 | 6115.19 | 1117.97 | .317 | 292.14 | 2892.80 | 6633.05        | 128.87          | 16.13           | .4089        | .057       | .0000          | .000         |
| 457.061                     | 744.90 | 694.14 | 6105.92 | 1218.71 | .346 | 214.18 | 2714.67 | 6921.45        | 98.38           | 14.97           | .4074        | .056       | .0000          | .000         |
| 463.204                     | 744.73 | 691.49 | 6101.69 | 1262.05 | .359 | 182.25 | 2643.21 | 6947.06        | 31.41           | 5.81            | .4057        | .056       | .0000          | .000         |
| 478.204                     | 743.47 | 690.00 | 6101.29 | 1265.01 | .360 | 182.70 | 2661.95 | 7003.49        | 70.42           | 13.99           | .4049        | .056       | .0000          | .000         |
| 493.204                     | 742.22 | 688.52 | 6100.90 | 1269.93 | .361 | 183.54 | 2680.75 | 7060.01        | 70.58           | 14.06           | .4046        | .056       | .0000          | .000         |
| 508.204                     | 740.96 | 687.04 | 6100.51 | 1273.83 | .362 | 184.19 | 2699.62 | 7116.66        | 70.78           | 14.13           | .4043        | .056       | .0000          | .000         |
| 523.204                     | 739.71 | 685.55 | 6100.12 | 1277.73 | .363 | 184.83 | 2718.55 | 7173.43        | 70.97           | 14.20           | .4040        | .056       | .0000          | .000         |
| 538.204                     | 738.45 | 684.07 | 6099.73 | 1281.61 | .364 | 185.48 | 2737.55 | 7230.32        | 71.17           | 14.28           | .4037        | .056       | .0000          | .000         |
| 553.204                     | 737.20 | 682.59 | 6099.34 | 1285.48 | .365 | 186.12 | 2756.62 | 7287.33        | 71.36           | 14.35           | .4034        | .056       | .0000          | .000         |
| 568.204                     | 735.94 | 681.11 | 6098.94 | 1289.34 | .366 | 186.77 | 2775.75 | 7344.46        | 71.55           | 14.42           | .4031        | .056       | .0000          | .000         |
| 583.204                     | 734.69 | 679.63 | 6098.55 | 1293.19 | .367 | 187.41 | 2794.95 | 7401.72        | 71.75           | 14.49           | .4028        | .056       | .0000          | .000         |
| 598.204                     | 733.43 | 678.16 | 6098.16 | 1297.03 | .369 | 188.06 | 2814.22 | 7459.10        | 71.94           | 14.56           | .4025        | .056       | .0000          | .000         |
| 613.204                     | 732.17 | 676.68 | 6097.77 | 1300.86 | .370 | 188.70 | 2833.55 | 7516.59        | 72.13           | 14.63           | .4022        | .056       | .0000          | .000         |

|          |        |        |         |         |      |         |         |         |        |       |       |      |       |      |
|----------|--------|--------|---------|---------|------|---------|---------|---------|--------|-------|-------|------|-------|------|
| 626.204  | 730.92 | 675.20 | 6097.38 | 1304.68 | .371 | 189.35  | 2852.94 | 7574.21 | 72.32  | 14.70 | .4019 | .056 | .0000 | .000 |
| 643.204  | 729.66 | 673.73 | 6096.99 | 1308.50 | .372 | 189.99  | 2872.41 | 7631.95 | 72.51  | 14.78 | .4015 | .055 | .0000 | .000 |
| 658.204  | 728.41 | 672.26 | 6096.59 | 1312.30 | .373 | 190.63  | 2891.93 | 7689.81 | 72.70  | 14.85 | .4012 | .055 | .0000 | .000 |
| 673.204  | 727.15 | 670.78 | 6096.23 | 1316.09 | .374 | 191.20  | 2911.53 | 7747.79 | 72.89  | 14.92 | .4009 | .055 | .0000 | .000 |
| 688.204  | 725.89 | 669.31 | 6095.81 | 1319.88 | .375 | 191.92  | 2931.19 | 7805.88 | 73.08  | 14.99 | .4006 | .055 | .0000 | .000 |
| 703.204  | 724.64 | 667.84 | 6095.41 | 1323.66 | .376 | 192.57  | 2950.91 | 7864.10 | 73.27  | 15.06 | .4003 | .055 | .0000 | .000 |
| 718.204  | 723.38 | 666.37 | 6095.02 | 1327.42 | .377 | 193.21  | 2970.71 | 7922.43 | 73.46  | 15.13 | .4000 | .055 | .0000 | .000 |
| 726.191  | 722.26 | 665.09 | 6094.71 | 1330.40 | .378 | 193.56  | 2981.27 | 7953.53 | 39.19  | 8.08  | .3997 | .055 | .0000 | .000 |
| 741.191  | 720.76 | 665.16 | 6096.55 | 1312.75 | .373 | 195.59  | 3044.26 | 8012.17 | 73.99  | 15.35 | .3994 | .055 | .0000 | .000 |
| 746.336  | 720.27 | 665.19 | 6097.16 | 1306.78 | .371 | 196.29  | 3066.01 | 8032.38 | 25.55  | 5.34  | .3994 | .055 | .0000 | .000 |
| 746.346  | 720.27 | 665.19 | 6097.58 | 1302.61 | .370 | 349.40  | 3074.47 | 8032.33 | .00    | .00   | .3995 | .055 | .0000 | .000 |
| 761.346  | 719.04 | 661.71 | 6094.19 | 1335.39 | .380 | 301.49  | 3055.18 | 8140.40 | 123.74 | 15.67 | .3995 | .055 | .0000 | .000 |
| 776.346  | 718.04 | 658.32 | 6091.04 | 1344.97 | .388 | 253.58  | 3035.73 | 8230.35 | 105.44 | 15.48 | .3987 | .055 | .0000 | .000 |
| 791.346  | 717.30 | 655.42 | 6088.20 | 1391.14 | .396 | 205.68  | 3016.71 | 8302.12 | 87.07  | 15.30 | .3980 | .055 | .0000 | .000 |
| 794.831  | 717.16 | 654.82 | 6087.59 | 1396.71 | .397 | 194.53  | 3012.25 | 8316.19 | 17.60  | 3.53  | .3974 | .055 | .0000 | .000 |
| 809.831  | 715.74 | 653.75 | 6087.88 | 1394.09 | .396 | 195.58  | 3014.30 | 8374.71 | 73.76  | 15.25 | .3973 | .055 | .0000 | .000 |
| 824.831  | 714.34 | 652.69 | 6088.16 | 1391.49 | .396 | 196.62  | 3076.52 | 8433.44 | 74.12  | 15.38 | .3970 | .055 | .0000 | .000 |
| 839.831  | 712.95 | 651.64 | 6088.44 | 1388.92 | .395 | 197.65  | 3108.91 | 8492.39 | 74.47  | 15.52 | .3968 | .055 | .0000 | .000 |
| 854.781  | 711.57 | 650.59 | 6088.72 | 1386.40 | .394 | 198.68  | 3141.36 | 8551.35 | 74.57  | 15.61 | .3966 | .055 | .0000 | .000 |
| 869.781  | 710.59 | 649.44 | 6094.83 | 1329.23 | .378 | 203.12  | 3203.31 | 8611.04 | 75.81  | 16.12 | .3964 | .055 | .0000 | .000 |
| 884.781  | 709.66 | 647.80 | 6100.24 | 1276.52 | .363 | 207.55  | 3428.37 | 8671.67 | 77.54  | 16.92 | .3972 | .055 | .0000 | .000 |
| 899.781  | 708.79 | 646.75 | 6105.04 | 1227.79 | .349 | 211.99  | 3576.54 | 8733.32 | 79.37  | 17.72 | .3979 | .055 | .0000 | .000 |
| 914.781  | 707.33 | 645.68 | 6109.22 | 1183.78 | .336 | 216.43  | 3727.81 | 8795.97 | 81.18  | 18.53 | .3985 | .055 | .0000 | .000 |
| 929.781  | 706.01 | 644.40 | 6112.99 | 1142.66 | .324 | 220.86  | 3882.19 | 8859.60 | 82.97  | 19.34 | .3989 | .055 | .0000 | .000 |
| 944.781  | 704.80 | 643.95 | 6116.40 | 1104.16 | .313 | 225.30  | 4039.68 | 8924.17 | 84.74  | 20.17 | .3993 | .055 | .0000 | .000 |
| 959.781  | 703.69 | 643.44 | 6119.49 | 1068.04 | .303 | 229.73  | 4206.28 | 8989.66 | 86.50  | 21.01 | .3996 | .055 | .0000 | .000 |
| 974.781  | 702.67 | 642.80 | 6122.30 | 1034.10 | .293 | 234.17  | 4363.98 | 9056.04 | 88.25  | 21.87 | .3999 | .055 | .0000 | .000 |
| 989.781  | 701.73 | 642.72 | 6124.86 | 1002.15 | .284 | 238.60  | 4530.80 | 9123.31 | 90.00  | 22.74 | .4002 | .055 | .0000 | .000 |
| 1004.781 | 700.85 | 642.74 | 6127.20 | 972.03  | .276 | 243.04  | 4700.72 | 9191.43 | 91.75  | 23.62 | .4004 | .055 | .0000 | .000 |
| 1019.781 | 700.03 | 641.67 | 6129.34 | 943.59  | .267 | 247.47  | 4873.74 | 9260.40 | 93.49  | 24.52 | .4006 | .055 | .0000 | .000 |
| 1034.781 | 699.27 | 640.50 | 6131.31 | 916.70  | .260 | 251.91  | 5049.88 | 9330.19 | 95.23  | 25.44 | .4008 | .055 | .0000 | .000 |
| 1049.791 | 698.98 | 640.22 | 6132.06 | 892.31  | .257 | 253.69  | 5121.32 | 9358.38 | 38.65  | 10.45 | .4010 | .055 | .0000 | .000 |
| 1055.791 | 698.33 | 640.22 | 6133.06 | 872.19  | .253 | 256.64  | 5241.31 | 9429.19 | 97.39  | 26.58 | .4011 | .055 | .0000 | .000 |
| 1070.791 | 697.71 | 640.14 | 6134.01 | 878.53  | .249 | 259.59  | 5362.68 | 9500.52 | 98.53  | 27.20 | .4011 | .055 | .0000 | .000 |
| 1084.791 | 697.16 | 640.26 | 6134.82 | 866.72  | .246 | 262.23  | 5472.10 | 9564.57 | 80.85  | 24.79 | .4011 | .055 | .0000 | .000 |
| 1099.791 | 696.71 | 640.11 | 6136.68 | 836.12  | .266 | 266.00  | 5556.00 | 9645.17 | 236.41 | 61.11 | .4011 | .055 | .0000 | .000 |
| 1114.791 | 696.57 | 640.57 | 6136.68 | 805.57  | .019 | 2556.00 | 345.30  | 362.00  | 362.00 | 16.70 | .4011 | .055 | .0000 | .000 |

| SLOT<br>INTERFACE<br>LOCATION<br>IN.   | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|----------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FOREWARD                               | 1.1675+02  | 7.7605+02 | 7.4638+02   | 6.1314+03   | 1.4876+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 5.4772+03       |
| AFT                                    | 1.1677+02  | 7.7614+02 | 7.4647+02   | 6.1315+03   | 1.4874+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 5.4772+03       |
| GAS BUILDUP IN SLOT, DW/DT = 6.2278-02 |            |           |             |             |               |                 |               |              |                     |                 |
| FOREWARD                               | 4.2705+02  | 7.4691+02 | 7.1113+02   | 6.1228+03   | 1.9234+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 6.7254+03       |
| AFT                                    | 4.2706+02  | 7.4717+02 | 7.1137+02   | 6.1231+03   | 1.9228+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 6.7253+03       |
| GAS BUILDUP IN SLOT, DW/DT = 5.8535-02 |            |           |             |             |               |                 |               |              |                     |                 |
| FOREWARD                               | 7.4634+02  | 7.2027+02 | 6.6519+02   | 6.0972+03   | 2.4456+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 8.0324+03       |
| AFT                                    | 7.4635+02  | 7.2063+02 | 6.6553+02   | 6.0976+03   | 2.4445+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 8.0323+03       |
| GAS BUILDUP IN SLOT, DW/DT = 5.5302-02 |            |           |             |             |               |                 |               |              |                     |                 |



IGNITION TIME, TIME (S)

.75000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 114563.74     | 2575495.2    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 12550575.     | 2821481.5    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 115954.34     | 26067.573    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | 5247358.9     | 1179653.2    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.99257     | 257.99257    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | 5931477.9     | 1333449.3    |
| THRUST COEFFICIENT                         | CF                   | 1.6396975     | 1.6396975    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4878.3856     | 10799.092    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 2322.5994     | 5120.4552    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 62.231854     | 137.19775    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 3305.0814     | 7286.4573    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 286.39837     | 443918.37    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 288.29455     | 17592813.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 504207.80     | 1111587.9    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 385.80504     | 850.55453    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1599656     | 1.1599656    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.889716     | 28.416960    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1561.4510     | 5122.8709    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .38579373     | .38579373    |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .58467542*09  | 848.00000    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .28378631*09  | 411.59725    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 126.99840     | 196847.92    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .10282324*01  | .40481591    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .42233448*02  | .16627342    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 45.860918     | 2798604.9    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 9.2429140     | 564037.22    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3414.1343     | 6145.4418    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 144.20549     | 223518.96    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 234.21608     | 14292742.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 56.224286     | 3431016.4    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .50975334*09  | 739.33472    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .24256834*09  | 351.81564    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.194479     | 23551.490    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RUZ(NI*1,1)          | .97185936*02  | .38262180    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI*2,1)          | .97185936*02  | .38262180    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI*1,1)         | .39526029*02  | .15561429    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI*2,1)         | .39526029*02  | .15561429    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 8.2175554     | 501466.00    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 0.8318738     | 538954.01    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI*2,3)         | 3415.8859     | 6148.5946    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 5.1607860     | 7999.2344    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5015500     | 2327.4071    |
| EXPANSION RATIO                            | EPR                  | 7.1582800     | 7.1582800    |
| PRESSURE RATIO                             | PEPO                 | .21610336*01  | .21610336*01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .38222494*01  | .38222494*01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 3.0000000     | 3.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | P0     | P      | T       | U       | M    | LP     | AP      | WDOT    | ORDOT   | DRDOT  | RB     | TAU  | NRTO   | TAUTO |
|-----------------------------|--------|--------|---------|---------|------|--------|---------|---------|---------|--------|--------|------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC  |      | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FORE                        | 848.00 | 802.05 | 6145.44 | 785.02  | .222 | 181.55 | 2622.70 | 4939.51 | 5007.33 | 67.82  | .4009  | .166 | .0000  | .0000 |
| 15.000                      | 824.47 | 803.68 | 6144.86 | 794.34  | .225 | 181.85 | 2631.52 | 5036.91 | 69.33   | 1.93   | .3970  | .162 | .0000  | .0000 |
| 30.000                      | 823.63 | 799.32 | 6144.28 | 803.54  | .228 | 182.16 | 2640.37 | 5073.71 | 68.75   | 1.94   | .3968  | .162 | .0000  | .0000 |
| 45.000                      | 822.78 | 797.44 | 6143.70 | 812.73  | .230 | 182.46 | 2649.22 | 5110.57 | 68.82   | 1.96   | .3965  | .162 | .0000  | .0000 |
| 60.000                      | 821.91 | 796.55 | 6143.11 | 821.92  | .233 | 182.76 | 2658.09 | 5207.50 | 68.90   | 1.97   | .3963  | .162 | .0000  | .0000 |
| 75.000                      | 821.04 | 795.14 | 6142.51 | 831.10  | .235 | 183.07 | 2666.98 | 5274.48 | 68.97   | 1.99   | .3960  | .162 | .0000  | .0000 |
| 90.000                      | 820.16 | 793.72 | 6141.90 | 840.29  | .238 | 183.37 | 2675.88 | 5341.52 | 69.04   | 2.00   | .3958  | .162 | .0000  | .0000 |
| 105.000                     | 819.26 | 792.28 | 6141.29 | 849.47  | .241 | 183.68 | 2684.80 | 5408.62 | 69.11   | 2.01   | .3956  | .162 | .0000  | .0000 |
| 116.761                     | 818.56 | 791.15 | 6140.81 | 856.67  | .243 | 183.91 | 2691.80 | 5461.27 | 54.23   | 1.59   | .3953  | .161 | .0000  | .0000 |
| 116.771                     | 818.56 | 791.15 | 6141.04 | 853.17  | .242 | 247.43 | 2762.19 | 5461.26 | .00     | .01    | .3951  | .161 | .0000  | .0000 |
| 131.771                     | 818.07 | 789.56 | 6139.61 | 874.26  | .248 | 211.89 | 2603.19 | 5545.53 | 86.36   | 2.10   | .3951  | .161 | .0000  | .0000 |
| 143.919                     | 817.77 | 788.25 | 6138.52 | 889.88  | .252 | 183.12 | 2667.82 | 5604.00 | 60.13   | 1.66   | .3948  | .161 | .0000  | .0000 |
| 158.919                     | 816.58 | 786.72 | 6138.10 | 895.88  | .254 | 184.08 | 2686.65 | 5670.92 | 68.97   | 2.05   | .3946  | .161 | .0000  | .0000 |
| 173.919                     | 815.39 | 785.17 | 6137.68 | 901.88  | .255 | 185.05 | 2705.55 | 5738.14 | 69.29   | 2.07   | .3943  | .161 | .0000  | .0000 |
| 188.919                     | 814.19 | 783.62 | 6137.25 | 907.87  | .257 | 186.02 | 2724.51 | 5805.66 | 69.61   | 2.09   | .3941  | .161 | .0000  | .0000 |
| 203.919                     | 812.98 | 782.06 | 6136.82 | 913.86  | .259 | 186.99 | 2743.54 | 5873.47 | 69.92   | 2.11   | .3938  | .161 | .0000  | .0000 |
| 218.919                     | 811.77 | 780.50 | 6136.39 | 919.84  | .261 | 187.96 | 2762.63 | 5941.58 | 70.24   | 2.14   | .3935  | .161 | .0000  | .0000 |
| 233.919                     | 810.55 | 778.92 | 6135.95 | 925.83  | .262 | 188.93 | 2781.79 | 6009.97 | 70.55   | 2.16   | .3932  | .160 | .0000  | .0000 |
| 248.919                     | 809.32 | 777.34 | 6135.51 | 931.81  | .264 | 189.90 | 2801.01 | 6078.66 | 70.87   | 2.18   | .3930  | .160 | .0000  | .0000 |
| 263.919                     | 808.08 | 775.75 | 6135.07 | 937.79  | .266 | 190.87 | 2820.30 | 6147.63 | 71.18   | 2.20   | .3927  | .160 | .0000  | .0000 |
| 278.919                     | 806.84 | 774.15 | 6134.63 | 943.77  | .267 | 191.84 | 2839.65 | 6216.89 | 71.49   | 2.23   | .3924  | .160 | .0000  | .0000 |
| 293.919                     | 805.59 | 772.54 | 6134.18 | 949.75  | .269 | 192.81 | 2859.06 | 6286.44 | 71.80   | 2.25   | .3921  | .160 | .0000  | .0000 |
| 308.919                     | 804.33 | 770.93 | 6133.73 | 955.73  | .271 | 193.78 | 2878.55 | 6356.28 | 72.11   | 2.27   | .3918  | .160 | .0000  | .0000 |
| 323.919                     | 803.07 | 769.30 | 6133.28 | 961.71  | .273 | 194.75 | 2898.09 | 6426.41 | 72.42   | 2.30   | .3915  | .160 | .0000  | .0000 |
| 338.919                     | 801.80 | 767.67 | 6132.83 | 967.69  | .274 | 195.72 | 2917.70 | 6496.81 | 72.73   | 2.32   | .3912  | .160 | .0000  | .0000 |
| 353.919                     | 800.52 | 766.04 | 6132.37 | 973.67  | .276 | 196.69 | 2937.38 | 6567.51 | 73.03   | 2.34   | .3910  | .159 | .0000  | .0000 |
| 368.919                     | 799.25 | 764.39 | 6131.91 | 979.66  | .278 | 197.66 | 2957.12 | 6638.48 | 73.34   | 2.37   | .3907  | .159 | .0000  | .0000 |
| 383.919                     | 797.94 | 762.74 | 6131.45 | 985.64  | .279 | 198.63 | 2976.92 | 6709.74 | 73.65   | 2.39   | .3904  | .159 | .0000  | .0000 |
| 398.919                     | 796.64 | 761.08 | 6130.98 | 991.63  | .281 | 199.60 | 2996.80 | 6781.28 | 73.95   | 2.41   | .3901  | .159 | .0000  | .0000 |
| 403.048                     | 796.28 | 760.62 | 6130.85 | 993.28  | .282 | 199.87 | 3002.28 | 6801.01 | 20.40   | .67    | .3898  | .159 | .0000  | .0000 |
| 418.048                     | 795.39 | 760.19 | 6131.33 | 987.10  | .280 | 198.04 | 3054.70 | 6872.36 | 73.80   | 2.45   | .3897  | .159 | .0000  | .0000 |
| 427.051                     | 794.17 | 759.23 | 6131.55 | 984.29  | .279 | 196.94 | 3086.40 | 6914.85 | 43.96   | 1.48   | .3896  | .159 | .0000  | .0000 |
| 427.061                     | 794.17 | 759.23 | 6132.28 | 974.85  | .276 | 370.48 | 3113.98 | 6914.84 | .00     | .01    | .3894  | .159 | .0000  | .0000 |
| 442.061                     | 793.11 | 752.32 | 6124.95 | 1065.98 | .302 | 292.63 | 2922.91 | 7035.16 | 122.91  | 2.59   | .3896  | .159 | .0000  | .0000 |
| 457.061                     | 792.36 | 749.92 | 6116.28 | 1164.72 | .331 | 214.78 | 2736.63 | 7126.72 | 93.93   | 2.36   | .3882  | .158 | .0000  | .0000 |
| 463.204                     | 792.22 | 740.27 | 6112.27 | 1267.55 | .343 | 182.89 | 2661.73 | 7155.85 | 30.03   | .90    | .3867  | .157 | .0000  | .0000 |
| 478.204                     | 791.10 | 738.82 | 6111.82 | 1212.29 | .344 | 183.54 | 2680.52 | 7221.05 | 67.37   | 2.17   | .3860  | .157 | .0000  | .0000 |
| 493.204                     | 789.99 | 737.39 | 6111.37 | 1216.98 | .345 | 184.18 | 2699.37 | 7286.40 | 67.52   | 2.18   | .3858  | .157 | .0000  | .0000 |
| 508.204                     | 788.88 | 735.96 | 6110.92 | 1221.66 | .347 | 184.82 | 2718.29 | 7351.91 | 67.72   | 2.20   | .3855  | .157 | .0000  | .0000 |
| 523.204                     | 787.77 | 734.53 | 6110.47 | 1226.32 | .348 | 185.47 | 2737.28 | 7417.60 | 67.91   | 2.22   | .3852  | .157 | .0000  | .0000 |
| 538.204                     | 786.65 | 733.10 | 6110.02 | 1230.96 | .350 | 186.11 | 2756.33 | 7483.47 | 68.10   | 2.23   | .3850  | .157 | .0000  | .0000 |
| 553.204                     | 785.54 | 731.67 | 6109.57 | 1235.59 | .351 | 186.76 | 2775.45 | 7549.50 | 68.28   | 2.25   | .3847  | .157 | .0000  | .0000 |
| 568.204                     | 784.42 | 730.24 | 6109.12 | 1240.21 | .352 | 187.40 | 2794.63 | 7615.71 | 68.47   | 2.26   | .3844  | .156 | .0000  | .0000 |
| 583.204                     | 783.30 | 728.81 | 6108.67 | 1244.81 | .353 | 188.04 | 2813.88 | 7682.09 | 68.66   | 2.28   | .3842  | .156 | .0000  | .0000 |
| 598.204                     | 782.18 | 727.38 | 6108.22 | 1249.39 | .355 | 188.69 | 2833.19 | 7748.65 | 68.85   | 2.30   | .3839  | .156 | .0000  | .0000 |
| 613.204                     | 781.06 | 725.95 | 6107.77 | 1253.97 | .356 | 189.33 | 2852.57 | 7815.37 | 69.04   | 2.31   | .3836  | .156 | .0000  | .0000 |

|          |        |        |         |         |      |        |         |          |        |      |       |      |       |       |
|----------|--------|--------|---------|---------|------|--------|---------|----------|--------|------|-------|------|-------|-------|
| 628.204  | 779.94 | 724.52 | 6107.32 | 1258.52 | .357 | 189.98 | 2872.01 | 7882.27  | 69.23  | 2.33 | .3834 | .156 | .0000 | .000  |
| 643.204  | 778.82 | 723.09 | 6106.87 | 1263.07 | .359 | 190.62 | 2871.52 | 7949.33  | 69.41  | 2.35 | .3831 | .156 | .0000 | .000  |
| 658.204  | 777.69 | 721.66 | 6106.42 | 1267.60 | .360 | 191.26 | 2911.10 | 8016.57  | 69.60  | 2.36 | .3829 | .156 | .0000 | .000  |
| 673.204  | 776.57 | 720.23 | 6105.97 | 1272.12 | .361 | 191.91 | 2936.74 | 8083.97  | 69.79  | 2.38 | .3826 | .156 | .0000 | .000  |
| 688.204  | 775.44 | 718.79 | 6105.51 | 1276.63 | .363 | 192.55 | 2950.45 | 8151.55  | 69.97  | 2.40 | .3823 | .155 | .0000 | .000  |
| 703.204  | 774.32 | 717.36 | 6105.06 | 1281.12 | .364 | 193.20 | 2970.22 | 8219.29  | 70.16  | 2.41 | .3821 | .155 | .0000 | .000  |
| 718.204  | 773.19 | 715.93 | 6104.61 | 1285.61 | .365 | 193.84 | 2990.06 | 8287.20  | 70.34  | 2.43 | .3818 | .155 | .0000 | .000  |
| 726.191  | 772.21 | 714.76 | 6104.29 | 1288.71 | .366 | 194.18 | 3000.64 | 8323.43  | 70.53  | 1.30 | .3815 | .155 | .0000 | .000  |
| 741.191  | 770.86 | 714.89 | 6105.91 | 1272.64 | .361 | 196.22 | 3063.83 | 8391.81  | 70.86  | 2.48 | .3813 | .155 | .0000 | .000  |
| 746.336  | 770.41 | 714.93 | 6106.46 | 1267.21 | .360 | 196.91 | 3085.65 | 8415.42  | 24.47  | .86  | .3813 | .155 | .0000 | .000  |
| 746.346  | 770.41 | 714.93 | 6107.45 | 1256.27 | .357 | 349.41 | 3109.36 | 8415.41  | .00    | .01  | .3813 | .155 | .0000 | .000  |
| 761.346  | 768.81 | 711.46 | 6104.11 | 1290.52 | .367 | 301.69 | 3085.29 | 8530.90  | 118.18 | 2.68 | .3815 | .155 | .0000 | .000  |
| 775.346  | 767.50 | 707.49 | 6100.84 | 1322.30 | .376 | 253.97 | 3051.23 | 8629.10  | 100.78 | 2.59 | .3815 | .155 | .0000 | .000  |
| 791.346  | 766.41 | 703.92 | 6097.77 | 1351.40 | .384 | 206.26 | 3037.19 | 8709.92  | 83.30  | 2.49 | .3799 | .154 | .0000 | .000  |
| 794.831  | 766.39 | 703.36 | 6097.14 | 1357.35 | .386 | 195.17 | 3031.61 | 8726.20  | 16.85  | .56  | .3793 | .154 | .0000 | .000  |
| 809.831  | 765.11 | 702.34 | 6097.32 | 1355.62 | .385 | 196.21 | 3053.76 | 8794.39  | 70.63  | 2.44 | .3792 | .154 | .0000 | .000  |
| 824.831  | 763.84 | 701.33 | 6097.50 | 1353.92 | .385 | 197.24 | 3096.07 | 8862.90  | 70.97  | 2.46 | .3790 | .154 | .0000 | .000  |
| 834.831  | 762.57 | 700.32 | 6097.68 | 1352.26 | .384 | 198.28 | 3128.55 | 8931.72  | 71.31  | 2.49 | .3788 | .154 | .0000 | .000  |
| 854.781  | 761.33 | 699.32 | 6097.85 | 1350.63 | .384 | 199.31 | 3161.09 | 9000.62  | 71.41  | 2.51 | .3786 | .154 | .0000 | .000  |
| 869.781  | 760.42 | 703.19 | 6103.51 | 1296.41 | .388 | 203.74 | 3303.74 | 9070.63  | 72.60  | 2.59 | .3784 | .154 | .0000 | .000  |
| 884.781  | 759.56 | 706.59 | 6108.51 | 1246.44 | .354 | 208.18 | 3449.45 | 9142.18  | 74.25  | 2.70 | .3791 | .154 | .0000 | .000  |
| 899.781  | 758.06 | 708.83 | 6112.85 | 1201.51 | .341 | 212.61 | 3598.24 | 9215.37  | 75.98  | 2.79 | .3798 | .154 | .0000 | .000  |
| 914.781  | 756.70 | 710.83 | 6116.74 | 1159.68 | .329 | 217.05 | 3750.09 | 9290.18  | 77.70  | 2.89 | .3802 | .153 | .0000 | .000  |
| 929.781  | 755.46 | 712.62 | 6120.24 | 1120.65 | .318 | 221.49 | 3905.00 | 9366.55  | 79.38  | 3.01 | .3806 | .155 | .0000 | .000  |
| 944.781  | 754.33 | 714.23 | 6123.42 | 1084.15 | .307 | 225.92 | 4062.98 | 9444.48  | 81.06  | 3.13 | .3809 | .155 | .0000 | .000  |
| 959.781  | 753.29 | 715.68 | 6126.29 | 1049.95 | .298 | 230.36 | 4224.03 | 9523.96  | 82.74  | 3.26 | .3812 | .155 | .0000 | .000  |
| 974.781  | 752.33 | 716.98 | 6128.90 | 1017.86 | .289 | 234.80 | 4388.14 | 9605.00  | 84.41  | 3.38 | .3815 | .155 | .0000 | .000  |
| 989.781  | 751.44 | 718.15 | 6131.29 | 987.70  | .280 | 239.23 | 4555.32 | 9687.57  | 86.08  | 3.51 | .3817 | .155 | .0000 | .000  |
| 1004.781 | 750.62 | 719.21 | 6133.46 | 959.31  | .272 | 243.67 | 4725.57 | 9771.68  | 87.74  | 3.64 | .3819 | .155 | .0000 | .000  |
| 1019.781 | 749.84 | 720.17 | 6135.46 | 932.55  | .264 | 248.10 | 4898.88 | 9857.32  | 89.41  | 3.77 | .3821 | .155 | .0000 | .000  |
| 1034.781 | 749.12 | 721.04 | 6137.29 | 907.28  | .257 | 252.54 | 5075.25 | 9944.48  | 91.06  | 3.90 | .3823 | .155 | .0000 | .000  |
| 1049.781 | 748.86 | 721.37 | 6137.98 | 897.53  | .254 | 254.32 | 5146.78 | 9979.84  | 36.96  | 1.60 | .3825 | .156 | .0000 | .000  |
| 1055.791 | 748.24 | 721.54 | 6138.88 | 884.77  | .251 | 257.27 | 5267.10 | 10068.90 | 93.12  | 4.06 | .3825 | .156 | .0000 | .000  |
| 1070.791 | 747.65 | 721.70 | 6139.73 | 872.47  | .247 | 260.22 | 5388.76 | 10158.96 | 94.21  | 4.15 | .3826 | .156 | .0000 | .000  |
| 1084.171 | 747.14 | 721.82 | 6140.46 | 861.85  | .244 | 262.86 | 5498.43 | 10240.12 | 84.95  | 3.78 | .3826 | .156 | .0000 | .000  |
| AFT (A)  | 739.35 | 709.76 | 6110.10 | 936.83  | .266 | .....  | 7999.23 | 10799.09 | 225.89 | 9.38 | .3826 | .156 | ....  | ..... |
| AFT (H)  | 739.43 | 734.30 | 6148.59 | -59.97  | .017 | .....  | 2588.63 | 342.46   | 345.88 | 3.42 | .3826 | .156 | ..... | ..... |



IGNITION TIME, TIME (S)

1.0000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|-----------------------------------------------------------------|----------------------|---------------|---------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 11560150.     | 2600623.6     |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 12662027.     | 2846536.9     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 112095.61     | 25200.095     |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOT                | 8125424.4     | 1826668.1     |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 257.65899     | 257.65899     |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVT                | 9083053.3     | 2041951.6     |
| THRUST COEFFICIENT                                              | CF                   | 1.6390292     | 1.6390292     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 4950.9873     | 10915.059     |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 3553.7710     | 7834.7240     |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 60.160900     | 132.63208     |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 3290.0412     | 7253.2993     |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 287.01643     | 444876.37     |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 287.57443     | 17548868.     |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 502955.76     | 1108827.6     |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 394.82161     | 870.43265     |
| RATIO OF SPECIFIC HEATS                                         | GAHA                 | 1.1599770     | 1.1599770     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AHW                  | 12.691186     | 28.420200     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1561.5436     | 5123.1746     |
| MAXIMUM CHAMBER MACH NUMBER                                     | AHPN                 | 0.38275920    | 0.38275920    |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |               |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | 0.59294912+09 | 860.00000     |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | 0.43098938+09 | 625.07724     |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 127.18902     | 197143.37     |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | 0.10221573-01 | 0.40242413    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | 0.67439257-02 | 0.26747739    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 46.534214     | 2778668.2     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 9.5696182     | 583973.94     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3415.6930     | 6148.2474     |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |               |
| RAIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABCYL                | 144.60776     | 224142.48     |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | 0.00000000    | 0.00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 235.85961     | 14270989.     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 56.580732     | 3452768.1     |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | 0.51440566+09 | 746.08234     |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | 0.37058822+09 | 537.49277     |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 15.219658     | 23590.518     |
| BURN RATE, REGION A (M/S,IN/SECT)                               | RBZ(NI+1,1)          | 0.96451408-02 | 0.37972996    |
| BURN RATE, REGION B (M/S,IN/SECT)                               | RBZ(NI+2,1)          | 0.96451408-02 | 0.37972996    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | 0.63822512-02 | 0.25126974    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | 0.63822512-02 | 0.25126974    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | 8.1806976     | 499211.30     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 8.8688215     | 541208.70     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3416.7615     | 6150.1707     |
| PORNT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )          | AZA                  | 5.1808633     | 8030.3543     |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |               |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5017955     | 2327.7878     |
| EXPANSION RATIO                                                 | EPR                  | 7.1571094     | 7.1571094     |
| PRESSURE RATIO                                                  | PEPO                 | 0.21614359-01 | 0.21614359-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | 0.37810250-01 | 0.37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 3.0000000     | 3.0000000     |

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OF POOR QUALITY



|          |        |        |         |         |      |        |         |          |        |      |       |      |       |      |
|----------|--------|--------|---------|---------|------|--------|---------|----------|--------|------|-------|------|-------|------|
| 628.204  | 787.26 | 732.44 | 6110.27 | 1245.51 | .354 | 190.59 | 2890.27 | 7933.27  | 68.99  | .56  | .3808 | .252 | .0000 | .000 |
| 643.204  | 785.50 | 730.31 | 6109.70 | 1251.37 | .355 | 191.22 | 2879.83 | 8001.09  | 69.16  | .53  | .3804 | .252 | .0000 | .000 |
| 658.204  | 783.74 | 728.16 | 6109.12 | 1257.25 | .357 | 191.87 | 2929.45 | 8070.71  | 69.32  | .50  | .3800 | .251 | .0000 | .000 |
| 673.204  | 782.64 | 726.75 | 6108.66 | 1261.89 | .358 | 192.51 | 2949.13 | 8139.70  | 69.48  | .49  | .3797 | .251 | .0000 | .000 |
| 688.204  | 781.54 | 725.33 | 6108.19 | 1266.53 | .360 | 193.15 | 2968.88 | 8208.86  | 69.65  | .49  | .3794 | .251 | .0000 | .000 |
| 703.204  | 780.44 | 723.91 | 6107.73 | 1271.15 | .361 | 193.80 | 2988.70 | 8278.21  | 69.84  | .49  | .3791 | .251 | .0000 | .000 |
| 718.204  | 779.34 | 722.49 | 6107.27 | 1275.75 | .362 | 194.44 | 3008.58 | 8347.73  | 70.02  | .50  | .3789 | .251 | .0000 | .000 |
| 734.191  | 778.24 | 721.35 | 6106.76 | 1278.88 | .363 | 194.78 | 3019.20 | 8394.82  | 70.22  | .50  | .3786 | .250 | .0000 | .000 |
| 741.191  | 777.07 | 721.46 | 6108.53 | 1263.18 | .369 | 196.82 | 3082.56 | 8454.85  | 70.54  | .50  | .3784 | .250 | .0000 | .000 |
| 746.336  | 776.63 | 721.51 | 6109.05 | 1257.88 | .357 | 197.51 | 3104.45 | 8479.03  | 24.36  | .17  | .3784 | .250 | .0000 | .000 |
| 749.346  | 776.62 | 721.51 | 6110.67 | 1240.54 | .352 | 344.41 | 3142.67 | 8479.03  | .00    | .00  | .3784 | .250 | .0000 | .000 |
| 761.346  | 775.10 | 718.53 | 6107.23 | 1276.14 | .362 | 301.08 | 3114.05 | 8595.69  | 117.33 | .67  | .3787 | .250 | .0000 | .000 |
| 776.346  | 773.85 | 714.48 | 6103.83 | 1309.55 | .372 | 254.35 | 3005.42 | 8695.21  | 100.14 | .61  | .3779 | .250 | .0000 | .000 |
| 791.346  | 772.82 | 713.78 | 6103.59 | 1340.55 | .381 | 206.81 | 3056.80 | 8777.51  | 82.86  | .56  | .3771 | .249 | .0000 | .000 |
| 794.831  | 772.84 | 713.24 | 6099.92 | 1346.91 | .383 | 195.77 | 3056.15 | 8794.17  | 16.77  | .12  | .3765 | .249 | .0000 | .000 |
| 803.831  | 771.59 | 709.23 | 6100.08 | 1345.36 | .382 | 196.80 | 3082.38 | 8863.97  | 70.32  | .52  | .3764 | .249 | .0000 | .000 |
| 821.831  | 770.35 | 708.22 | 6103.24 | 1343.84 | .382 | 197.04 | 3114.78 | 8934.11  | 70.66  | .52  | .3762 | .249 | .0000 | .000 |
| 839.831  | 769.12 | 707.22 | 6100.40 | 1342.36 | .381 | 198.87 | 3147.35 | 9004.58  | 71.00  | .53  | .3760 | .249 | .0000 | .000 |
| 854.781  | 767.90 | 706.23 | 6103.55 | 1340.91 | .381 | 199.90 | 3179.98 | 9075.15  | 71.09  | .53  | .3758 | .248 | .0000 | .000 |
| 869.781  | 767.01 | 713.07 | 6106.39 | 1287.43 | .366 | 204.34 | 3323.29 | 9146.88  | 72.27  | .54  | .3756 | .248 | .0000 | .000 |
| 884.781  | 766.17 | 713.43 | 6111.00 | 1238.14 | .352 | 208.77 | 3469.64 | 9220.23  | 73.91  | .56  | .3763 | .249 | .0000 | .000 |
| 899.781  | 764.70 | 715.66 | 6115.24 | 1193.81 | .339 | 213.21 | 3619.01 | 9295.28  | 75.63  | .58  | .3769 | .249 | .0000 | .000 |
| 914.781  | 763.36 | 717.65 | 6119.06 | 1152.53 | .327 | 217.65 | 3771.40 | 9372.00  | 77.33  | .61  | .3774 | .250 | .0000 | .000 |
| 929.781  | 762.15 | 719.43 | 6122.50 | 1114.03 | .316 | 222.08 | 3926.82 | 9450.38  | 79.00  | .63  | .3777 | .250 | .0000 | .000 |
| 944.781  | 761.04 | 721.03 | 6125.61 | 1078.04 | .306 | 226.52 | 4085.27 | 9530.40  | 80.67  | .65  | .3781 | .250 | .0000 | .000 |
| 959.781  | 760.02 | 722.47 | 6128.43 | 1044.33 | .296 | 230.96 | 4246.75 | 9612.07  | 82.34  | .67  | .3783 | .250 | .0000 | .000 |
| 974.781  | 759.08 | 723.76 | 6130.99 | 1012.71 | .287 | 235.19 | 4411.25 | 9695.37  | 83.99  | .69  | .3786 | .251 | .0000 | .000 |
| 989.781  | 758.20 | 724.93 | 6133.33 | 982.99  | .279 | 239.83 | 4578.78 | 9780.31  | 85.65  | .71  | .3789 | .251 | .0000 | .000 |
| 1004.781 | 757.39 | 725.98 | 6135.46 | 955.02  | .271 | 244.27 | 4744.33 | 9866.89  | 87.30  | .73  | .3791 | .251 | .0000 | .000 |
| 1019.781 | 756.63 | 726.94 | 6137.42 | 928.66  | .263 | 248.70 | 4922.91 | 9955.08  | 88.95  | .75  | .3793 | .251 | .0000 | .000 |
| 1034.781 | 755.92 | 727.80 | 6139.21 | 903.79  | .256 | 253.14 | 5099.52 | 10044.91 | 90.59  | .77  | .3794 | .251 | .0000 | .000 |
| 1049.791 | 755.65 | 728.12 | 6139.89 | 884.20  | .253 | 254.92 | 5171.13 | 10081.35 | 92.76  | .31  | .3796 | .251 | .0000 | .000 |
| 1055.791 | 755.05 | 728.30 | 6140.77 | 861.69  | .250 | 257.87 | 5291.76 | 10173.19 | 92.64  | .80  | .3796 | .261 | .0000 | .000 |
| 1070.791 | 754.47 | 728.45 | 6141.60 | 869.64  | .246 | 260.82 | 5413.70 | 10266.10 | 93.71  | .81  | .3797 | .251 | .0000 | .000 |
| 1084.791 | 753.97 | 728.57 | 6142.31 | 859.24  | .243 | 263.46 | 5523.60 | 10349.86 | 84.50  | .74  | .3797 | .251 | .0000 | .000 |
| AFT1A1   | 746.10 | 716.23 | 6111.66 | 937.08  | .266 | .0000  | 8030.35 | 10915.06 | 224.56 | 1.85 | .3797 | .251 | .0000 | .000 |
| AFT1B1   | 746.10 | 745.98 | 6150.17 | -58.74  | .017 | .0000  | 2619.75 | 342.48   | 343.82 | 1.34 | .3797 | .251 | .0000 | .000 |

|                                        | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU:<br>IN. | WSLOT<br>LB/SEC |
|----------------------------------------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|----------------------|-----------------|
| FORWARD                                | 1.1676+02                            | 8.3156+02  | 8.0493+02 | 6.1438+03   | 1.3789+02   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000               | 5.4670+03       |
| AFT                                    | 1.1677+02                            | 8.3191+02  | 8.0527+02 | 6.1441+03   | 1.3784+02   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000               | 5.4670+03       |
| GAS BUILDUP IN SLOT, DW/DT = 2.2722-03 |                                      |            |           |             |             |               |                 |               |              |                      |                 |
| FORWARD                                | 4.2705+02                            | 8.0834+02  | 7.7419+02 | 6.1348+03   | 1.8277+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000               | 6.9471+03       |
| AFT                                    | 4.2706+02                            | 8.0937+02  | 7.7518+02 | 6.1359+03   | 1.8257+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000               | 6.9471+03       |
| GAS BUILDUP IN SLOT, DW/DT = 2.4605-03 |                                      |            |           |             |             |               |                 |               |              |                      |                 |
| FORWARD                                | 7.4634+02                            | 7.7663+02  | 7.2151+02 | 6.1091+03   | 2.3836+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000               | 8.4790+03       |
| AFT                                    | 7.4635+02                            | 7.7812+02  | 7.2289+02 | 6.1107+03   | 2.3797+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000               | 8.4790+03       |
| GAS BUILDUP IN SLOT, DW/DT = 1.0780-03 |                                      |            |           |             |             |               |                 |               |              |                      |                 |



IGNITION TIME, TIME (S) 5.0000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 12625973.     | 2838431.7    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 13711976.     | 3082574.8    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 108543.70     | 24401.594    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | 5752513.      | 12825915.    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.91144     | 257.91144    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | 62372588.     | 14021916.    |
| THRUST COEFFICIENT                         | CF                   | 1.6371197     | 1.6371197    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 5353.1118     | 11823.638    |
| FLOWRATE (INTEGRAL (KG,LBM)                | SWDOTN               | 24390.930     | 53772.797    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | HIF                  | 58.254615     | 128.42944    |
| INERT MASS REMAINING (KG,LBM)              | HIR                  | 3054.0237     | 6732.9698    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 295.56058     | 458119.82    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 275.73896     | 16826623.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 481983.78     | 1062592.3    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 496.10751     | 1093.7298    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1600255     | 1.1600255    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.897434     | 28.433975    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1562.3474     | 5125.8115    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .34255745     | .34255745    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .62812690+09  | 911.02106    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .29002580+10  | 4206.4686    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 128.79114     | 199626.67    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .10486458-01  | .41285269    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .48123755-01  | 1.8946360    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 40.235303     | 2455308.9    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 14.868528     | 907333.25    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3422.3247     | 6160.1845    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| AXIAL BURN AREA (M**2,IN**2)               | ABCYL                | 151.14019     | 234267.77    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 227.73268     | 13909306.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 62.507933     | 3814468.1    |
| <b>NOZ END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .55642973+09  | 807.03310    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .25346372+10  | 3676.1804    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.629248     | 24225.382    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI*1,1)          | .70161738-01  | .40006834    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI*2,1)          | .10195128-01  | .40138298    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI*1,1)         | .45860538-01  | 1.8055330    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI*2,1)         | .45936163-01  | 1.8085104    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 7.5709711     | 462009.00    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 9.4784580     | 578411.00    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI*2,3)         | 3424.3771     | 6163.8788    |
| PUNT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 5.5077158     | 8536.9766    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5052522     | 2333.1456    |
| EXPANSION RATIO                            | EPR                  | 7.1406737     | 7.1406737    |
| PRESSURE RATIO                             | PEPU                 | .21676978-01  | .21676978-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA    | DEG. R  | U      | M    | LP     | AP      | WDOT    | DWDT    | LB/SEC | IN/SEC | TAU   | IN/SEC | RBTO | TAUTO |
|-----------------------------|--------|--------|---------|---------|--------|------|--------|---------|---------|---------|--------|--------|-------|--------|------|-------|
|                             | PSIA   |        |         |         | FT/SEC |      | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.   | IN/SEC |      | IN.   |
| FORE                        | 911.02 | 873.29 | 6160.18 | 682.32  |        | .193 | 192.43 | 2945.79 | 5241.11 | 5265.04 | 23.93  | .4157  | 1.895 | .0000  |      | .000  |
| 15.000                      | 891.66 | 872.16 | 6159.72 | 690.92  |        | .195 | 192.71 | 2954.55 | 5316.42 | 75.62   | .31    | .4126  | 1.873 | .0000  |      | .000  |
| 30.000                      | 890.98 | 871.01 | 6159.25 | 699.51  |        | .198 | 193.00 | 2963.33 | 5391.82 | 75.71   | .31    | .4124  | 1.872 | .0000  |      | .000  |
| 45.000                      | 890.29 | 869.85 | 6158.77 | 708.09  |        | .200 | 193.28 | 2972.13 | 5467.30 | 75.79   | .31    | .4122  | 1.871 | .0000  |      | .000  |
| 60.000                      | 889.60 | 868.67 | 6158.29 | 716.67  |        | .203 | 193.56 | 2980.93 | 5542.86 | 75.87   | .31    | .4120  | 1.870 | .0000  |      | .000  |
| 75.000                      | 888.89 | 867.48 | 6157.80 | 725.24  |        | .205 | 193.84 | 2989.76 | 5618.48 | 75.94   | .31    | .4118  | 1.869 | .0000  |      | .000  |
| 90.000                      | 888.17 | 866.28 | 6157.31 | 733.80  |        | .208 | 194.12 | 2998.59 | 5694.18 | 76.02   | .31    | .4116  | 1.868 | .0000  |      | .000  |
| 105.000                     | 887.45 | 865.07 | 6156.81 | 742.36  |        | .210 | 194.41 | 3007.45 | 5769.96 | 76.09   | .32    | .4114  | 1.867 | .0000  |      | .000  |
| 110.761                     | 886.87 | 864.11 | 6156.42 | 749.06  |        | .212 | 194.63 | 3014.40 | 5829.42 | 59.71   | .25    | .4112  | 1.866 | .0000  |      | .000  |
| 116.771                     | 886.85 | 865.56 | 6157.87 | 724.02  |        | .205 | 236.10 | 3114.15 | 5929.42 | .00     | .00    | .4113  | 1.865 | .0000  |      | .000  |
| 131.771                     | 886.21 | 863.20 | 6156.16 | 753.46  |        | .213 | 212.75 | 3044.88 | 5916.91 | 87.85   | .36    | .4113  | 1.865 | .0000  |      | .000  |
| 143.919                     | 885.72 | 861.25 | 6154.71 | 777.50  |        | .220 | 193.84 | 2988.73 | 5981.06 | 64.42   | .27    | .4109  | 1.864 | .0000  |      | .000  |
| 158.919                     | 884.75 | 859.25 | 6154.36 | 783.15  |        | .222 | 194.60 | 3029.07 | 6056.72 | 75.97   | .31    | .4106  | 1.863 | .0000  |      | .000  |
| 173.919                     | 883.78 | 858.65 | 6154.01 | 788.79  |        | .223 | 195.76 | 3029.46 | 6132.70 | 76.29   | .31    | .4104  | 1.862 | .0000  |      | .000  |
| 188.919                     | 882.79 | 857.34 | 6153.66 | 794.42  |        | .225 | 196.73 | 3049.90 | 6209.01 | 76.63   | .32    | .4102  | 1.860 | .0000  |      | .000  |
| 203.919                     | 881.80 | 856.02 | 6153.30 | 800.04  |        | .226 | 197.69 | 3070.40 | 6285.66 | 76.96   | .32    | .4099  | 1.859 | .0000  |      | .000  |
| 218.919                     | 880.81 | 854.70 | 6152.95 | 805.66  |        | .228 | 198.65 | 3090.95 | 6362.63 | 77.30   | .32    | .4097  | 1.858 | .0000  |      | .000  |
| 233.919                     | 879.80 | 853.36 | 6152.59 | 811.26  |        | .230 | 199.61 | 3111.55 | 6439.94 | 77.63   | .32    | .4095  | 1.857 | .0000  |      | .000  |
| 248.919                     | 878.80 | 852.03 | 6152.23 | 816.86  |        | .231 | 200.57 | 3132.21 | 6517.58 | 77.96   | .32    | .4093  | 1.856 | .0000  |      | .000  |
| 263.919                     | 877.78 | 850.68 | 6151.87 | 822.46  |        | .233 | 201.53 | 3152.92 | 6595.54 | 78.29   | .33    | .4090  | 1.854 | .0000  |      | .000  |
| 278.919                     | 876.76 | 849.32 | 6151.51 | 828.05  |        | .234 | 202.49 | 3173.68 | 6673.84 | 78.62   | .33    | .4088  | 1.853 | .0000  |      | .000  |
| 293.919                     | 875.73 | 847.96 | 6151.14 | 833.63  |        | .236 | 203.45 | 3194.50 | 6752.47 | 78.95   | .33    | .4086  | 1.852 | .0000  |      | .000  |
| 308.919                     | 874.70 | 846.60 | 6150.77 | 839.20  |        | .238 | 204.41 | 3215.37 | 6831.42 | 79.28   | .33    | .4084  | 1.851 | .0000  |      | .000  |
| 323.919                     | 873.66 | 845.22 | 6150.40 | 844.78  |        | .239 | 205.38 | 3236.29 | 6910.70 | 79.61   | .33    | .4081  | 1.849 | .0000  |      | .000  |
| 338.919                     | 872.61 | 843.84 | 6150.03 | 850.33  |        | .241 | 206.34 | 3257.27 | 6990.30 | 79.94   | .33    | .4079  | 1.848 | .0000  |      | .000  |
| 353.919                     | 871.56 | 842.45 | 6149.66 | 855.91  |        | .242 | 207.30 | 3278.29 | 7070.24 | 80.27   | .34    | .4077  | 1.847 | .0000  |      | .000  |
| 368.919                     | 870.50 | 841.05 | 6149.28 | 861.47  |        | .244 | 208.26 | 3299.38 | 7150.49 | 80.59   | .34    | .4074  | 1.846 | .0000  |      | .000  |
| 383.919                     | 869.44 | 839.65 | 6148.90 | 867.02  |        | .245 | 209.22 | 3320.51 | 7231.07 | 80.92   | .34    | .4072  | 1.844 | .0000  |      | .000  |
| 398.919                     | 868.37 | 838.24 | 6148.52 | 872.57  |        | .247 | 210.18 | 3341.70 | 7311.98 | 81.25   | .34    | .4070  | 1.843 | .0000  |      | .000  |
| 403.048                     | 868.07 | 837.85 | 6148.41 | 874.10  |        | .247 | 210.45 | 3347.55 | 7334.30 | 22.42   | .09    | .4067  | 1.842 | .0000  |      | .000  |
| 418.048                     | 867.33 | 837.32 | 6148.59 | 871.49  |        | .247 | 208.61 | 3396.80 | 7415.06 | 81.10   | .34    | .4067  | 1.841 | .0000  |      | .000  |
| 427.051                     | 866.40 | 836.49 | 6148.67 | 870.39  |        | .246 | 207.51 | 3426.60 | 7463.18 | 48.33   | .20    | .4066  | 1.841 | .0000  |      | .000  |
| 427.061                     | 866.17 | 841.28 | 6153.74 | 793.02  |        | .224 | 376.62 | 3742.58 | 7463.18 | .00     | .00    | .4072  | 1.842 | .0000  |      | .000  |
| 442.061                     | 865.28 | 834.20 | 6147.44 | 888.11  |        | .251 | 300.59 | 3425.70 | 7593.89 | 131.24  | .53    | .4072  | 1.842 | .0000  |      | .000  |
| 457.061                     | 864.56 | 825.22 | 6138.98 | 1001.63 |        | .284 | 224.56 | 3107.13 | 7695.12 | 101.64  | .42    | .4060  | 1.836 | .0000  |      | .000  |
| 463.204                     | 864.44 | 820.91 | 6134.66 | 1054.96 |        | .299 | 193.42 | 2976.17 | 7727.99 | 33.02   | .14    | .4045  | 1.829 | .0000  |      | .000  |
| 478.204                     | 862.99 | 819.09 | 6134.20 | 1060.40 |        | .301 | 194.05 | 2995.77 | 7802.19 | 74.52   | .32    | .4038  | 1.825 | .0000  |      | .000  |
| 493.204                     | 861.54 | 817.27 | 6133.75 | 1065.81 |        | .302 | 194.68 | 3015.43 | 7876.54 | 74.66   | .32    | .4034  | 1.824 | .0000  |      | .000  |
| 508.204                     | 860.08 | 815.45 | 6133.29 | 1071.22 |        | .304 | 195.32 | 3035.15 | 7951.06 | 74.85   | .32    | .4031  | 1.822 | .0000  |      | .000  |
| 523.204                     | 858.61 | 813.62 | 6132.84 | 1076.61 |        | .305 | 195.95 | 3054.92 | 8025.77 | 75.03   | .32    | .4028  | 1.821 | .0000  |      | .000  |
| 538.204                     | 857.15 | 811.79 | 6132.38 | 1082.00 |        | .307 | 196.58 | 3074.75 | 8100.66 | 75.21   | .32    | .4025  | 1.819 | .0000  |      | .000  |
| 553.204                     | 855.68 | 809.96 | 6131.92 | 1087.39 |        | .308 | 197.21 | 3094.54 | 8175.73 | 75.40   | .33    | .4022  | 1.817 | .0000  |      | .000  |
| 568.204                     | 854.20 | 808.12 | 6131.46 | 1092.77 |        | .310 | 197.85 | 3114.59 | 8250.99 | 75.58   | .33    | .4019  | 1.816 | .0000  |      | .000  |
| 583.204                     | 852.72 | 806.28 | 6130.99 | 1098.14 |        | .311 | 198.48 | 3134.59 | 8326.42 | 75.76   | .33    | .4015  | 1.814 | .0000  |      | .000  |
| 598.204                     | 851.24 | 804.43 | 6130.53 | 1103.51 |        | .313 | 199.11 | 3154.66 | 8402.03 | 75.94   | .33    | .4012  | 1.812 | .0000  |      | .000  |
| 613.204                     | 849.75 | 802.54 | 6130.06 | 1108.87 |        | .314 | 199.74 | 3174.78 | 8477.82 | 76.12   | .33    | .4009  | 1.811 | .0000  |      | .000  |

|          |        |        |         |         |      |        |         |          |       |     |       |       |       |       |
|----------|--------|--------|---------|---------|------|--------|---------|----------|-------|-----|-------|-------|-------|-------|
| 628.204  | 840.26 | 800.73 | 6129.59 | 1114.23 | .316 | 200.37 | 3194.95 | 8553.79  | 76.30 | .33 | .4006 | 1.809 | .0000 | .0000 |
| 643.204  | 846.77 | 798.87 | 6129.12 | 1119.58 | .317 | 201.01 | 3215.19 | 8629.94  | 76.48 | .34 | .4003 | 1.807 | .0000 | .0000 |
| 658.204  | 845.27 | 797.01 | 6128.64 | 1124.93 | .319 | 201.64 | 3235.48 | 8706.26  | 76.66 | .34 | .3999 | 1.806 | .0000 | .0000 |
| 673.204  | 843.77 | 795.15 | 6128.17 | 1130.28 | .321 | 202.27 | 3255.83 | 8782.76  | 76.84 | .34 | .3996 | 1.804 | .0000 | .0000 |
| 688.204  | 842.26 | 793.28 | 6127.69 | 1135.63 | .322 | 202.90 | 3276.23 | 8859.44  | 77.02 | .34 | .3993 | 1.802 | .0000 | .0000 |
| 703.204  | 840.75 | 791.41 | 6127.21 | 1140.97 | .324 | 203.53 | 3296.73 | 8936.29  | 77.19 | .34 | .3989 | 1.801 | .0000 | .0000 |
| 718.204  | 839.24 | 789.53 | 6126.73 | 1146.31 | .325 | 204.17 | 3317.22 | 9013.32  | 77.37 | .34 | .3986 | 1.800 | .0000 | .0000 |
| 733.204  | 837.73 | 787.66 | 6126.25 | 1151.65 | .326 | 204.80 | 3337.71 | 9090.45  | 77.54 | .18 | .3983 | 1.798 | .0000 | .0000 |
| 748.204  | 836.22 | 785.79 | 6125.77 | 1156.99 | .327 | 205.43 | 3358.20 | 9167.58  | 77.71 | .35 | .3981 | 1.797 | .0000 | .0000 |
| 763.204  | 834.71 | 783.92 | 6125.29 | 1162.33 | .328 | 206.06 | 3378.69 | 9244.71  | 77.88 | .12 | .3981 | 1.797 | .0000 | .0000 |
| 778.204  | 833.20 | 782.05 | 6124.81 | 1167.67 | .329 | 206.69 | 3399.18 | 9321.84  | 78.05 | .00 | .3992 | 1.799 | .0000 | .0000 |
| 793.204  | 831.69 | 780.18 | 6124.33 | 1173.01 | .330 | 207.32 | 3419.67 | 9398.97  | 78.22 | .52 | .3992 | 1.799 | .0000 | .0000 |
| 808.204  | 830.18 | 778.31 | 6123.85 | 1178.35 | .331 | 207.95 | 3440.16 | 9476.10  | 78.39 | .46 | .3984 | 1.795 | .0000 | .0000 |
| 823.204  | 828.67 | 776.44 | 6123.37 | 1183.69 | .332 | 208.58 | 3460.65 | 9553.23  | 78.56 | .40 | .3975 | 1.792 | .0000 | .0000 |
| 838.204  | 827.16 | 774.57 | 6122.89 | 1189.03 | .333 | 209.21 | 3481.14 | 9630.36  | 78.73 | .08 | .3966 | 1.788 | .0000 | .0000 |
| 853.204  | 825.65 | 772.70 | 6122.41 | 1194.37 | .334 | 209.84 | 3501.63 | 9707.49  | 78.90 | .35 | .3965 | 1.787 | .0000 | .0000 |
| 868.204  | 824.14 | 770.83 | 6121.93 | 1199.71 | .335 | 210.47 | 3522.12 | 9784.62  | 79.07 | .36 | .3963 | 1.786 | .0000 | .0000 |
| 883.204  | 822.63 | 768.96 | 6121.45 | 1205.05 | .336 | 211.10 | 3542.61 | 9861.75  | 79.24 | .36 | .3960 | 1.785 | .0000 | .0000 |
| 898.204  | 821.12 | 767.09 | 6120.97 | 1210.39 | .337 | 211.73 | 3563.10 | 9938.88  | 79.41 | .37 | .3963 | 1.788 | .0000 | .0000 |
| 913.204  | 819.61 | 765.22 | 6120.49 | 1215.73 | .338 | 212.36 | 3583.59 | 10016.01 | 79.58 | .38 | .3966 | 1.790 | .0000 | .0000 |
| 928.204  | 818.10 | 763.35 | 6119.99 | 1221.07 | .339 | 212.99 | 3604.08 | 10093.14 | 79.75 | .40 | .3970 | 1.792 | .0000 | .0000 |
| 943.204  | 816.59 | 761.48 | 6119.51 | 1226.41 | .340 | 213.62 | 3624.57 | 10170.27 | 79.92 | .41 | .3973 | 1.794 | .0000 | .0000 |
| 958.204  | 815.08 | 759.61 | 6119.03 | 1231.75 | .341 | 214.25 | 3645.06 | 10247.40 | 80.09 | .42 | .3976 | 1.795 | .0000 | .0000 |
| 973.204  | 813.57 | 757.74 | 6118.55 | 1237.09 | .342 | 214.88 | 3665.55 | 10324.53 | 80.26 | .43 | .3978 | 1.797 | .0000 | .0000 |
| 988.204  | 812.06 | 755.87 | 6118.07 | 1242.43 | .343 | 215.51 | 3686.04 | 10401.66 | 80.43 | .44 | .3980 | 1.798 | .0000 | .0000 |
| 1003.204 | 810.55 | 754.00 | 6117.59 | 1247.77 | .344 | 216.14 | 3706.53 | 10478.79 | 80.60 | .44 | .3982 | 1.799 | .0000 | .0000 |
| 1018.204 | 809.04 | 752.13 | 6117.11 | 1253.11 | .345 | 216.77 | 3727.02 | 10555.92 | 80.77 | .45 | .3984 | 1.800 | .0000 | .0000 |
| 1033.204 | 807.53 | 750.26 | 6116.63 | 1258.45 | .346 | 217.40 | 3747.51 | 10633.05 | 80.94 | .46 | .3985 | 1.801 | .0000 | .0000 |
| 1048.204 | 806.02 | 748.39 | 6116.15 | 1263.79 | .347 | 218.03 | 3768.00 | 10710.18 | 81.11 | .47 | .3987 | 1.802 | .0000 | .0000 |
| 1063.204 | 804.51 | 746.52 | 6115.67 | 1269.13 | .348 | 218.66 | 3788.49 | 10787.31 | 81.28 | .48 | .3988 | 1.802 | .0000 | .0000 |
| 1078.204 | 803.00 | 744.65 | 6115.19 | 1274.47 | .349 | 219.29 | 3808.98 | 10864.44 | 81.45 | .49 | .3987 | 1.802 | .0000 | .0000 |
| 1093.204 | 801.49 | 742.78 | 6114.71 | 1279.81 | .350 | 219.92 | 3829.47 | 10941.57 | 81.62 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1108.204 | 800.00 | 740.91 | 6114.23 | 1285.15 | .351 | 220.55 | 3849.96 | 11018.70 | 81.79 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1123.204 | 798.49 | 739.04 | 6113.75 | 1290.49 | .352 | 221.18 | 3870.45 | 11095.83 | 81.96 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1138.204 | 796.98 | 737.17 | 6113.27 | 1295.83 | .353 | 221.81 | 3890.94 | 11172.96 | 82.13 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1153.204 | 795.47 | 735.30 | 6112.79 | 1301.17 | .354 | 222.44 | 3911.43 | 11250.09 | 82.30 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1168.204 | 793.96 | 733.43 | 6112.31 | 1306.51 | .355 | 223.07 | 3931.92 | 11327.22 | 82.47 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1183.204 | 792.45 | 731.56 | 6111.83 | 1311.85 | .356 | 223.70 | 3952.41 | 11404.35 | 82.64 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1198.204 | 790.94 | 729.69 | 6111.35 | 1317.19 | .357 | 224.33 | 3972.90 | 11481.48 | 82.81 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1213.204 | 789.43 | 727.82 | 6110.87 | 1322.53 | .358 | 224.96 | 3993.39 | 11558.61 | 82.98 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1228.204 | 787.92 | 725.95 | 6110.39 | 1327.87 | .359 | 225.59 | 4013.88 | 11635.74 | 83.15 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1243.204 | 786.41 | 724.08 | 6109.91 | 1333.21 | .360 | 226.22 | 4034.37 | 11712.87 | 83.32 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1258.204 | 784.90 | 722.21 | 6109.43 | 1338.55 | .361 | 226.85 | 4054.86 | 11790.00 | 83.49 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1273.204 | 783.39 | 720.34 | 6108.95 | 1343.89 | .362 | 227.48 | 4075.35 | 11867.13 | 83.66 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1288.204 | 781.88 | 718.47 | 6108.47 | 1349.23 | .363 | 228.11 | 4095.84 | 11944.26 | 83.83 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1303.204 | 780.37 | 716.60 | 6107.99 | 1354.57 | .364 | 228.74 | 4116.33 | 12021.39 | 84.00 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1318.204 | 778.86 | 714.73 | 6107.51 | 1359.91 | .365 | 229.37 | 4136.82 | 12098.52 | 84.17 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1333.204 | 777.35 | 712.86 | 6107.03 | 1365.25 | .366 | 230.00 | 4157.31 | 12175.65 | 84.34 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1348.204 | 775.84 | 710.99 | 6106.55 | 1370.59 | .367 | 230.63 | 4177.80 | 12252.78 | 84.51 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1363.204 | 774.33 | 709.12 | 6106.07 | 1375.93 | .368 | 231.26 | 4198.29 | 12329.91 | 84.68 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1378.204 | 772.82 | 707.25 | 6105.59 | 1381.27 | .369 | 231.89 | 4218.78 | 12407.04 | 84.85 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1393.204 | 771.31 | 705.38 | 6105.11 | 1386.61 | .370 | 232.52 | 4239.27 | 12484.17 | 85.02 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1408.204 | 769.80 | 703.51 | 6104.63 | 1391.95 | .371 | 233.15 | 4259.76 | 12561.30 | 85.19 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1423.204 | 768.29 | 701.64 | 6104.15 | 1397.29 | .372 | 233.78 | 4280.25 | 12638.43 | 85.36 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1438.204 | 766.78 | 699.77 | 6103.67 | 1402.63 | .373 | 234.41 | 4300.74 | 12715.56 | 85.53 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1453.204 | 765.27 | 697.90 | 6103.19 | 1407.97 | .374 | 235.04 | 4321.23 | 12792.69 | 85.70 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1468.204 | 763.76 | 696.03 | 6102.71 | 1413.31 | .375 | 235.67 | 4341.72 | 12869.82 | 85.87 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1483.204 | 762.25 | 694.16 | 6102.23 | 1418.65 | .376 | 236.30 | 4362.21 | 12946.95 | 86.04 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1498.204 | 760.74 | 692.29 | 6101.75 | 1423.99 | .377 | 236.93 | 4382.70 | 13024.08 | 86.21 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1513.204 | 759.23 | 690.42 | 6101.27 | 1429.33 | .378 | 237.56 | 4403.19 | 13101.21 | 86.38 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1528.204 | 757.72 | 688.55 | 6100.79 | 1434.67 | .379 | 238.19 | 4423.68 | 13178.34 | 86.55 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1543.204 | 756.21 | 686.68 | 6100.31 | 1440.01 | .380 | 238.82 | 4444.17 | 13255.47 | 86.72 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1558.204 | 754.70 | 684.81 | 6099.83 | 1445.35 | .381 | 239.45 | 4464.66 | 13332.60 | 86.89 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1573.204 | 753.19 | 682.94 | 6099.35 | 1450.69 | .382 | 240.08 | 4485.15 | 13409.73 | 87.06 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1588.204 | 751.68 | 681.07 | 6098.87 | 1456.03 | .383 | 240.71 | 4505.64 | 13486.86 | 87.23 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1603.204 | 750.17 | 679.20 | 6098.39 | 1461.37 | .384 | 241.34 | 4526.13 | 13563.99 | 87.40 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1618.204 | 748.66 | 677.33 | 6097.91 | 1466.71 | .385 | 241.97 | 4546.62 | 13641.12 | 87.57 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1633.204 | 747.15 | 675.46 | 6097.43 | 1472.05 | .386 | 242.60 | 4567.11 | 13718.25 | 87.74 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1648.204 | 745.64 | 673.59 | 6096.95 | 1477.39 | .387 | 243.23 | 4587.60 | 13795.38 | 87.91 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1663.204 | 744.13 | 671.72 | 6096.47 | 1482.73 | .388 | 243.86 | 4608.09 | 13872.51 | 88.08 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1678.204 | 742.62 | 669.85 | 6095.99 | 1488.07 | .389 | 244.49 | 4628.58 | 13949.64 | 88.25 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1693.204 | 741.11 | 667.98 | 6095.51 | 1493.41 | .390 | 245.12 | 4649.07 | 14026.77 | 88.42 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1708.204 | 739.60 | 666.11 | 6095.03 | 1498.75 | .391 | 245.75 | 4669.56 | 14103.90 | 88.59 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1723.204 | 738.09 | 664.24 | 6094.55 | 1504.09 | .392 | 246.38 | 4690.05 | 14181.03 | 88.76 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1738.204 | 736.58 | 662.37 | 6094.07 | 1509.43 | .393 | 247.01 | 4710.54 | 14258.16 | 88.93 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1753.204 | 735.07 | 660.50 | 6093.59 | 1514.77 | .394 | 247.64 | 4731.03 | 14335.29 | 89.10 | .44 | .3988 | 1.802 | .0000 | .0000 |
| 1768.204 | 733.56 | 658.63 | 6093.11 | 1520.11 | .    |        |         |          |       |     |       |       |       |       |

DATE 071076

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| SLOT<br>INTERFACE<br>CATION<br>IN.     | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU.<br>IN. | MSLOT<br>LB/SEC |
|----------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|----------------------|-----------------|
| FORWARD                                | 1.1676+02  | 8.8687+02 | 8.6411+02   | 6.1564+03   | 1.3718+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000               | 5.8294+03       |
| AFT                                    | 1.1677+02  | 8.8837+02 | 8.6556+02   | 6.1579+03   | 1.3698+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000               | 5.8294+03       |
| GAS BUILDUP IN SLOT, DW/DT = 2.2980-04 |            |           |             |             |               |                 |               |              |                      |                 |
| FORWARD                                | 4.2705+02  | 8.6640+02 | 8.3649+02   | 6.1487+03   | 1.8205+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 7.4632+03       |
| AFT                                    | 4.2706+02  | 8.7136+02 | 8.4128+02   | 6.1537+03   | 1.8116+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 7.4632+03       |
| GAS BUILDUP IN SLOT, DW/DT = 2.7496-04 |            |           |             |             |               |                 |               |              |                      |                 |
| FORWARD                                | 7.4634+02  | 8.3636+02 | 7.8793+02   | 6.1279+03   | 2.3637+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 9.1587+03       |
| AFT                                    | 7.4635+02  | 8.4369+02 | 7.9484+02   | 6.1356+03   | 2.3461+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 9.1587+03       |
| GAS BUILDUP IN SLOT, DW/DT = 3.7542-04 |            |           |             |             |               |                 |               |              |                      |                 |

IGNITION TIME, TIME (S)

9.0000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|--------------------------------------------|----------------------|---------------|---------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 13002157.     | 2923001.2     |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 14069522.     | 3162954.7     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 98118.502     | 22057.917     |
| DELIVERED TOTAL IMPULSE (N.S,LBF.S)        | SRHDT1               | 10830923+09   | 24366869.     |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 258.03492     | 258.03492     |
| VACUUM TOTAL IMPULSE (N.S,LBF.S)           | SRMVT1               | 11801875+09   | 26531671.     |
| THRUST COEFFICIENT                         | CF                   | 1.6351487     | 1.6351487     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 5507.4095     | 12141.760     |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 46165.716     | 101777.98     |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 52.659488     | 116.09430     |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 2837.6302     | 6255.9037     |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 301.51258     | 467345.43     |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 263.31940     | 16068736.     |
| PROPELLANT MASS REMAINING (KG,LBM)         | MF                   | 460113.45     | 10143765      |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 581.29623     | 1281.5388     |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1600306     | 1.1600306     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.898092     | 28.435425     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1562.5274     | 5126.4023     |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | 0.30792456    | 0.30792456    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |               |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 0.63182892+09 | 916.39038     |
| PRESSURE INTEGRAL (N.S/M**2,LBF.S/IN**2)   | SPHDT                | 0.54238716+10 | 7866.6608     |
| BURN AREA (M**2,IN**2)                     | AHH                  | 127.63244     | 197830.69     |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | 0.10542032-01 | 0.41504062    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 0.90147423-01 | 3.5491112     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 34.840416     | 2126092.7     |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 20.263415     | 1236549.5     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3424.9973     | 6164.9951     |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |               |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 157.99844     | 244898.07     |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | 0.0000000     | 0.0000000     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 221.55169     | 13519914.     |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 68.889188     | 4203876.2     |
| <b>AFT END PARAMETERS:</b>                 |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 0.57000919+09 | 826.72845     |
| PRESSURE INTEGRAL (N.S/M**2,LBF.S/IN**2)   | SPONDT               | 0.47409285+10 | 6948.6544     |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.881701     | 24616.686     |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | 0.10255818-01 | 0.40377235    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | 0.10281476-01 | 0.40478251    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | 0.86623855-01 | 3.4103880     |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | 0.86825047-01 | 3.4183089     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 6.9272993     | 422729.74     |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 10.122130     | 617690.27     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3425.9261     | 6166.6669     |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 5.8507273     | 9068.6455     |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |               |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5095247     | 2339.7679     |
| EXPANSION RATIO                            | EPR                  | 7.1204633     | 7.1204633     |
| PRESSURE RATIO                             | PEPO                 | 0.21757380-01 | 0.21757380-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | 0.37810250-01 | 0.37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 1.0000000     | 1.0000000     |

 ORIGINAL PAGE IS  
OF POOR QUALITY

INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M      | LP      | AP      | WDOT    | DWDOT   | DM/DT  | RB     | TAU   | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|--------|---------|---------|---------|---------|--------|--------|-------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.   | IN/SEC | IN.   |
| FORE                        | 916.39 | 886.58 | 6165.00 | 602.17 | .170   | 202.79  | 3272.56 | 5212.89 | 5236.79 | 23.90  | .4172  | 3.549 | .0000  | .000  |
| 15.000                      | 901.04 | 885.63 | 6164.61 | 610.31 | .173   | 203.08  | 3281.65 | 5292.70 | 80.11   | .30    | .4148  | 3.527 | .0000  | .000  |
| 30.000                      | 900.48 | 884.67 | 6164.21 | 618.44 | .175   | 203.36  | 3290.77 | 5372.61 | 80.21   | .30    | .4146  | 3.525 | .0000  | .000  |
| 45.000                      | 899.92 | 883.70 | 6163.81 | 626.55 | .177   | 203.64  | 3299.89 | 5452.60 | 80.29   | .30    | .4145  | 3.523 | .0000  | .000  |
| 60.000                      | 899.35 | 882.72 | 6163.41 | 634.66 | .179   | 203.92  | 3309.03 | 5532.67 | 80.37   | .30    | .4143  | 3.521 | .0000  | .000  |
| 75.000                      | 898.78 | 881.73 | 6163.03 | 642.76 | .182   | 204.20  | 3318.18 | 5612.81 | 80.45   | .30    | .4141  | 3.520 | .0000  | .000  |
| 90.000                      | 898.18 | 880.72 | 6162.59 | 650.85 | .184   | 204.48  | 3327.34 | 5693.04 | 80.53   | .30    | .4140  | 3.518 | .0000  | .000  |
| 105.000                     | 897.58 | 879.71 | 6162.17 | 658.93 | .186   | 204.77  | 3336.52 | 5773.35 | 80.61   | .30    | .4138  | 3.516 | .0000  | .000  |
| 116.761                     | 897.10 | 878.90 | 6161.84 | 665.27 | .188   | 204.99  | 3343.72 | 5836.36 | 63.25   | .24    | .4137  | 3.514 | .0000  | .000  |
| 116.771                     | 897.07 | 878.49 | 6163.42 | 634.48 | .179   | 232.93  | 3500.49 | 5836.36 | .00     | .00    | .4138  | 3.514 | .0000  | .000  |
| 131.771                     | 896.56 | 878.09 | 6161.87 | 664.76 | .188   | 217.02  | 3398.87 | 5924.63 | 88.60   | .34    | .4138  | 3.514 | .0000  | .000  |
| 143.919                     | 896.15 | 876.59 | 6160.51 | 690.22 | .195   | 204.14  | 3316.50 | 5991.51 | 67.14   | .25    | .4134  | 3.511 | .0000  | .000  |
| 158.919                     | 895.36 | 875.50 | 6160.21 | 695.72 | .197   | 205.10  | 3338.31 | 6071.69 | 80.49   | .30    | .4131  | 3.509 | .0000  | .000  |
| 173.919                     | 894.56 | 874.41 | 6159.91 | 701.20 | .198   | 206.06  | 3360.16 | 6152.20 | 80.82   | .31    | .4130  | 3.507 | .0000  | .000  |
| 188.919                     | 893.76 | 873.31 | 6159.60 | 706.67 | .200   | 207.02  | 3382.05 | 6233.06 | 81.16   | .31    | .4128  | 3.505 | .0000  | .000  |
| 203.919                     | 892.94 | 872.21 | 6159.30 | 712.13 | .201   | 207.97  | 3403.98 | 6314.25 | 81.50   | .31    | .4126  | 3.503 | .0000  | .000  |
| 218.919                     | 892.13 | 871.09 | 6158.99 | 717.57 | .203   | 208.93  | 3425.96 | 6395.77 | 81.84   | .31    | .4124  | 3.501 | .0000  | .000  |
| 233.919                     | 891.30 | 869.97 | 6158.68 | 723.01 | .205   | 209.89  | 3447.98 | 6477.64 | 82.18   | .31    | .4122  | 3.498 | .0000  | .000  |
| 248.919                     | 890.48 | 868.85 | 6158.37 | 728.44 | .206   | 210.85  | 3470.04 | 6559.84 | 82.52   | .31    | .4120  | 3.496 | .0000  | .000  |
| 263.919                     | 889.64 | 867.71 | 6158.06 | 733.86 | .208   | 211.81  | 3492.14 | 6642.38 | 82.86   | .32    | .4119  | 3.494 | .0000  | .000  |
| 278.919                     | 888.80 | 866.57 | 6157.74 | 739.26 | .209   | 212.76  | 3514.28 | 6725.26 | 83.19   | .32    | .4117  | 3.492 | .0000  | .000  |
| 293.919                     | 887.99 | 865.43 | 6157.43 | 744.66 | .211   | 213.72  | 3536.47 | 6808.47 | 83.53   | .32    | .4115  | 3.490 | .0000  | .000  |
| 308.919                     | 887.11 | 864.28 | 6157.11 | 750.05 | .212   | 214.68  | 3558.70 | 6892.02 | 83.87   | .32    | .4113  | 3.488 | .0000  | .000  |
| 323.919                     | 886.25 | 863.12 | 6156.79 | 755.43 | .214   | 215.64  | 3580.97 | 6975.90 | 84.20   | .32    | .4111  | 3.486 | .0000  | .000  |
| 338.919                     | 885.39 | 861.95 | 6156.47 | 760.81 | .215   | 216.59  | 3603.28 | 7060.11 | 84.54   | .32    | .4109  | 3.484 | .0000  | .000  |
| 353.919                     | 884.52 | 860.78 | 6156.15 | 766.17 | .217   | 217.55  | 3625.63 | 7144.65 | 84.87   | .33    | .4107  | 3.482 | .0000  | .000  |
| 368.919                     | 883.65 | 859.60 | 6155.82 | 771.53 | .218   | 218.51  | 3648.03 | 7229.53 | 85.21   | .33    | .4105  | 3.479 | .0000  | .000  |
| 383.919                     | 882.77 | 858.41 | 6155.49 | 776.88 | .220   | 219.47  | 3670.46 | 7314.74 | 85.54   | .33    | .4103  | 3.477 | .0000  | .000  |
| 398.919                     | 881.88 | 857.22 | 6155.16 | 782.23 | .221   | 220.43  | 3692.94 | 7400.29 | 85.87   | .33    | .4101  | 3.475 | .0000  | .000  |
| 403.048                     | 881.04 | 856.09 | 6155.07 | 783.70 | .222   | 220.69  | 3699.14 | 7423.89 | 23.69   | .09    | .4099  | 3.473 | .0000  | .000  |
| 418.048                     | 880.43 | 855.70 | 6155.05 | 784.04 | .222   | 218.85  | 3745.28 | 7509.29 | 85.74   | .33    | .4099  | 3.472 | .0000  | .000  |
| 427.051                     | 879.72 | 855.00 | 6155.05 | 784.15 | .222   | 217.75  | 3773.21 | 7560.19 | 51.10   | .20    | .4097  | 3.471 | .0000  | .000  |
| 427.061                     | 879.24 | 863.93 | 6161.38 | 674.00 | .191   | 384.65  | 4364.10 | 7560.19 | .00     | .00    | .4105  | 3.475 | .0000  | .000  |
| 442.061                     | 878.47 | 864.83 | 6156.09 | 767.12 | .217   | 309.50  | 3927.32 | 7695.29 | 135.61  | .51    | .4105  | 3.475 | .0000  | .000  |
| 457.061                     | 877.73 | 864.45 | 6148.44 | 884.53 | .250   | 234.35  | 3482.62 | 7801.02 | 106.13  | .41    | .4095  | 3.464 | .0000  | .000  |
| 473.204                     | 877.59 | 864.17 | 6144.28 | 942.28 | .267   | 203.57  | 3298.22 | 7835.77 | 34.89   | .14    | .4081  | 3.451 | .0000  | .000  |
| 478.204                     | 876.41 | 863.65 | 6143.89 | 947.56 | .268   | 204.20  | 3318.62 | 7914.59 | 79.12   | .31    | .4074  | 3.445 | .0000  | .000  |
| 493.204                     | 875.23 | 863.13 | 6143.19 | 952.82 | .270   | 204.82  | 3339.07 | 7993.54 | 79.27   | .31    | .4071  | 3.442 | .0000  | .000  |
| 508.204                     | 874.04 | 862.60 | 6143.10 | 958.07 | .271   | 205.45  | 3359.58 | 8072.69 | 79.46   | .31    | .4069  | 3.439 | .0000  | .000  |
| 523.204                     | 872.85 | 862.07 | 6142.70 | 963.30 | .273   | 206.07  | 3380.13 | 8152.03 | 79.65   | .31    | .4066  | 3.436 | .0000  | .000  |
| 538.204                     | 871.65 | 861.53 | 6142.30 | 968.53 | .274   | 206.70  | 3400.73 | 8231.56 | 79.84   | .32    | .4064  | 3.434 | .0000  | .000  |
| 553.204                     | 870.45 | 860.99 | 6141.90 | 973.74 | .276   | 207.33  | 3421.38 | 8311.28 | 80.04   | .32    | .4061  | 3.431 | .0000  | .000  |
| 568.204                     | 869.25 | 860.44 | 6141.50 | 978.94 | .277   | 207.95  | 3442.08 | 8391.19 | 80.23   | .32    | .4058  | 3.428 | .0000  | .000  |
| 583.204                     | 868.04 | 859.84 | 6141.10 | 984.13 | .279   | 208.58  | 3462.83 | 8471.28 | 80.42   | .32    | .4056  | 3.425 | .0000  | .000  |
| 598.204                     | 866.83 | 859.32 | 6140.70 | 989.32 | .280   | 209.21  | 3483.63 | 8551.57 | 80.60   | .32    | .4053  | 3.422 | .0000  | .000  |
| 613.204                     | 865.61 | 858.78 | 6140.29 | 994.49 | .282   | 209.83  | 3504.48 | 8632.04 | 80.79   | .32    | .4050  | 3.419 | .0000  | .000  |

|          |        |        |         |         |      |        |         |          |        |      |       |       |       |       |
|----------|--------|--------|---------|---------|------|--------|---------|----------|--------|------|-------|-------|-------|-------|
| 628.204  | 864.39 | 825.22 | 5139.89 | 999.65  | .283 | 210.46 | 3525.38 | 8712.70  | 80.98  | .32  | .4048 | 3.416 | .0000 | .000  |
| 643.204  | 863.17 | 823.65 | 6139.48 | 1004.81 | .285 | 211.08 | 3546.33 | 8793.54  | 81.17  | .33  | .4045 | 3.413 | .0000 | .000  |
| 658.204  | 861.94 | 822.08 | 6139.07 | 1009.96 | .286 | 211.71 | 3567.33 | 8874.57  | 81.36  | .33  | .4042 | 3.410 | .0000 | .000  |
| 673.204  | 860.71 | 820.51 | 6138.66 | 1015.10 | .289 | 212.34 | 3588.37 | 8955.79  | 81.54  | .33  | .4040 | 3.407 | .0000 | .000  |
| 688.204  | 859.47 | 818.93 | 6138.25 | 1020.23 | .289 | 212.96 | 3609.47 | 9037.19  | 81.73  | .33  | .4037 | 3.405 | .0000 | .000  |
| 703.204  | 858.23 | 817.35 | 6137.83 | 1025.35 | .291 | 213.59 | 3630.62 | 9118.77  | 81.92  | .33  | .4034 | 3.402 | .0000 | .000  |
| 718.204  | 856.98 | 815.77 | 6137.42 | 1030.47 | .292 | 214.22 | 3651.81 | 9200.54  | 82.10  | .33  | .4031 | 3.399 | .0000 | .000  |
| 726.191  | 856.32 | 814.92 | 6137.20 | 1033.19 | .293 | 214.55 | 3663.12 | 9244.15  | 43.78  | .18  | .4029 | 3.397 | .0000 | .000  |
| 741.191  | 855.42 | 814.85 | 6138.01 | 1023.20 | .290 | 216.58 | 3732.69 | 9326.45  | 82.64  | .34  | .4027 | 3.395 | .0000 | .000  |
| 746.336  | 854.64 | 814.31 | 6138.23 | 1020.46 | .289 | 217.27 | 3750.67 | 9354.85  | 28.52  | .12  | .4027 | 3.395 | .0000 | .000  |
| 746.346  | 854.05 | 822.91 | 6147.72 | 894.68  | .253 | 353.07 | 4246.97 | 9354.85  | .00    | .00  | .4041 | 3.401 | .0000 | .000  |
| 761.346  | 853.27 | 818.32 | 6143.75 | 949.42  | .269 | 310.51 | 4076.23 | 9481.96  | 127.61 | .50  | .4041 | 3.402 | .0000 | .000  |
| 776.346  | 852.59 | 813.32 | 6139.23 | 1007.95 | .286 | 267.95 | 3905.36 | 9592.66  | 111.14 | .44  | .4033 | 3.393 | .0000 | .000  |
| 791.346  | 852.01 | 807.83 | 6134.07 | 1070.89 | .304 | 225.39 | 3733.98 | 9606.87  | 94.59  | .38  | .4024 | 3.388 | .0000 | .000  |
| 794.831  | 851.91 | 806.50 | 6132.77 | 1086.22 | .306 | 215.50 | 3694.98 | 9706.39  | 19.59  | .08  | .4015 | 3.380 | .0000 | .000  |
| 809.831  | 851.03 | 805.66 | 6132.77 | 1086.18 | .308 | 216.51 | 3729.33 | 9788.57  | 82.52  | .34  | .4013 | 3.379 | .0000 | .000  |
| 824.831  | 850.16 | 804.84 | 6132.77 | 1086.17 | .308 | 217.52 | 3764.70 | 9871.09  | 82.86  | .34  | .4011 | 3.378 | .0000 | .000  |
| 839.831  | 849.29 | 804.01 | 6132.77 | 1086.17 | .308 | 218.53 | 3800.18 | 9953.97  | 83.22  | .34  | .4010 | 3.376 | .0000 | .000  |
| 854.781  | 848.42 | 803.14 | 6132.77 | 1086.20 | .308 | 219.54 | 3835.66 | 10036.92 | 83.30  | .34  | .4008 | 3.375 | .0000 | .000  |
| 869.781  | 847.25 | 805.13 | 6135.98 | 1048.09 | .297 | 223.99 | 4000.98 | 10121.16 | 84.59  | .35  | .4007 | 3.373 | .0000 | .000  |
| 884.781  | 846.18 | 806.83 | 6138.83 | 1012.96 | .287 | 228.44 | 4168.30 | 10207.11 | 86.30  | .36  | .4010 | 3.378 | .0000 | .000  |
| 899.781  | 845.21 | 808.33 | 6141.38 | 980.50  | .278 | 232.89 | 4336.71 | 10294.81 | 88.07  | .37  | .4013 | 3.382 | .0000 | .000  |
| 914.781  | 844.31 | 809.66 | 6143.67 | 950.42  | .269 | 237.34 | 4507.12 | 10384.26 | 89.83  | .38  | .4016 | 3.385 | .0000 | .000  |
| 929.781  | 843.48 | 810.83 | 6145.74 | 922.48  | .261 | 241.79 | 4679.22 | 10475.46 | 91.59  | .39  | .4018 | 3.388 | .0000 | .000  |
| 944.781  | 842.71 | 811.88 | 6147.60 | 896.45  | .254 | 246.24 | 4853.02 | 10568.40 | 93.34  | .40  | .4020 | 3.391 | .0000 | .000  |
| 959.781  | 841.99 | 812.80 | 6149.30 | 872.16  | .247 | 250.69 | 5028.51 | 10663.09 | 95.09  | .41  | .4022 | 3.393 | .0000 | .000  |
| 974.781  | 841.31 | 813.63 | 6150.84 | 849.44  | .240 | 255.14 | 5205.70 | 10759.51 | 96.83  | .41  | .4024 | 3.395 | .0000 | .000  |
| 989.781  | 840.67 | 814.36 | 6152.25 | 828.16  | .234 | 259.58 | 5384.58 | 10857.66 | 98.57  | .42  | .4025 | 3.397 | .0000 | .000  |
| 1004.781 | 840.07 | 815.02 | 6153.54 | 808.18  | .229 | 264.03 | 5565.15 | 10957.54 | 100.31 | .43  | .4026 | 3.398 | .0000 | .000  |
| 1019.781 | 839.51 | 815.60 | 6154.72 | 789.39  | .223 | 268.48 | 5747.43 | 11059.16 | 102.05 | .43  | .4027 | 3.400 | .0000 | .000  |
| 1034.781 | 838.97 | 816.13 | 6155.81 | 771.69  | .218 | 272.93 | 5931.39 | 11162.50 | 103.78 | .44  | .4028 | 3.401 | .0000 | .000  |
| 1049.791 | 838.22 | 815.77 | 6156.19 | 755.40  | .217 | 274.71 | 6035.58 | 11204.39 | 42.07  | .18  | .4029 | 3.402 | .0000 | .000  |
| 1055.791 | 837.74 | 815.63 | 6156.75 | 756.15  | .214 | 277.67 | 6136.35 | 11309.86 | 105.91 | .45  | .4029 | 3.402 | .0000 | .000  |
| 1070.791 | 837.28 | 815.68 | 6157.27 | 747.31  | .211 | 280.63 | 6267.57 | 11416.44 | 107.04 | .45  | .4029 | 3.402 | .0000 | .000  |
| 1084.171 | 836.13 | 815.13 | 6157.67 | 740.47  | .209 | 283.66 | 6385.00 | 11512.48 | 96.44  | .40  | .4029 | 3.402 | .0000 | .000  |
| AF1(A)   | 826.75 | 793.28 | 6130.09 | 943.19  | .267 | .....  | 9068.65 | 12141.76 | 252.85 | 1.02 | .4038 | 3.410 | ....  | ..... |
| AF1(B)   | 826.75 | 826.69 | 6166.67 | -41.89  | .012 | .....  | 3658.04 | 377.45   | 378.76 | 1.31 | .4048 | 3.418 | ..... | ..... |

| SLOT                                   | PO        | P         | T         | U         | AP        | DWDOT     | AB      | RB     | DELTA  | WSLOT     |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|--------|--------|-----------|
| INTERFACE                              | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC    | SQ. IN. | IN/SEC | TAU-   | LB/SEC    |
| LOCATION                               |           |           |           |           |           |           |         |        | IN.    |           |
| IN.                                    |           |           |           |           |           |           |         |        |        |           |
| FOREWARD                               | 1.1676+02 | 8.9710+02 | 8.7890+02 | 6.1618+03 | 1.3514+02 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000 | 5.8364+03 |
| AFT                                    | 1.1677+02 | 8.9873+02 | 8.8049+02 | 6.1634+03 | 1.3493+02 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000 | 5.8364+03 |
| GAS BUILDUP IN SLOT, DW/DT = 9.6525-05 |           |           |           |           |           |           |         |        |        |           |
| FOREWARD                               | 4.2705+02 | 8.7972+02 | 8.5500+02 | 6.1560+03 | 1.8060+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 7.5602+03 |
| AFT                                    | 4.2706+02 | 8.8582+02 | 8.6093+02 | 6.1614+03 | 1.7954+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 7.5602+03 |
| GAS BUILDUP IN SLOT, DW/DT = 1.4527-04 |           |           |           |           |           |           |         |        |        |           |
| FOREWARD                               | 7.4634+02 | 8.5464+02 | 8.1431+02 | 6.1382+03 | 2.3400+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 9.3549+03 |
| AFT                                    | 7.4635+02 | 8.6367+02 | 8.2291+02 | 6.1477+03 | 2.3191+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 9.3549+03 |
| GAS BUILDUP IN SLOT, DW/DT = 2.2467-04 |           |           |           |           |           |           |         |        |        |           |



IGNITION TIME, TIME (S)

13.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 13215663.     | 2970999.2    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 14253570.     | 3204329.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 86983.089     | 19554.576    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .16082226*09  | 36154283.    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 258.11901     | 258.11901    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .17466503*09  | 39266260.    |
| THRUST COEFFICIENT                         | CF                   | 1.6332944     | 1.6332944    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 5584.2036     | 12311.238    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 68351.606     | 150689.67    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 46.683193     | 102.91882    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 2644.9816     | 5831.1863    |
| TOTAL BURN AREA (IN**2,IN**2)              | ABTOT                | 304.76236     | 472382.61    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 250.64688     | 15295411.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 437034.74     | 965263.37    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 664.01037     | 1463.9099    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1600292     | 1.1600292    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.897918     | 28.435042    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1562.6129     | 5126.6829    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPH                 | .27842044     | .27842044    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .63085106*09  | 914.97211    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .79502094*10  | 11530.804    |
| BURN AREA (M**2,IN**2)                     | AMH                  | 123.78804     | 191871.84    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .10565043*01  | .41594658    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .13234673     | 5.2105014    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 29.542475     | 1802792.4    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 25.561357     | 1559049.7    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,1)            | 3426.7759     | 6168.1967    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 164.97946     | 255718.67    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 214.83330     | 13107932.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 75.607844     | 4613873.7    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .57645996*09  | 836.08450    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .73838879*10  | 10274.311    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.994872     | 24792.101    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(INI+1,1)         | .10302821*01  | .40562289    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(INI+2,1)         | .10322029*01  | .40637910    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(INI+1,1)        | .12769467     | 5.0273492    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(INI+2,1)        | .12799170     | 5.0390435    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 6.2711124     | 382686.76    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 10.778317     | 657733.24    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(INI+2,3)        | 3426.6656     | 6167.9982    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 6.2107736     | 9626.7185    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5138750     | 2346.5109    |
| EXPANSION RATIO                            | EPR                  | 7.1000010     | 7.1000018    |
| PRESSURE RATIO                             | PEPO                 | .21839683*01  | .21839683*01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250*01  | .37810250*01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000    |

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## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | P0     | P      | T       | U      | M    | LP     | AP      | WDOT    | DWDOT   | LD/SEC | LB/SEC | IN/SEC | TAV   | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|---------|---------|---------|--------|--------|--------|-------|--------|-------|
| PSIA                        | PSIA   | DEG.   | R       | FT/SEC |      | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.   | IN/SEC | IN.   |
| FORE                        |        |        |         |        |      |        |         |         |         |        |        |        |       |        |       |
| 15-000                      | 914.97 | 892.12 | 6168.20 | 525.73 | .149 | 213.21 | 3617.09 | 5060.17 | 5083.16 | 23.00  | .4175  | 5.211  | .0000 | .0000  | .0000 |
| 30-000                      | 903.16 | 891.34 | 6167.87 | 533.51 | .151 | 213.49 | 3627.35 | 5144.27 | 84.41   | .30    | .4157  | 5.197  | .0000 | .0000  | .0000 |
| 45-000                      | 902.71 | 890.54 | 6167.54 | 541.29 | .153 | 213.77 | 3636.82 | 5228.47 | 84.50   | .30    | .4156  | 5.185  | .0000 | .0000  | .0000 |
| 60-000                      | 902.25 | 889.74 | 6167.21 | 549.05 | .155 | 214.05 | 3646.30 | 5312.76 | 84.59   | .30    | .4154  | 5.182  | .0000 | .0000  | .0000 |
| 75-000                      | 901.78 | 888.93 | 6166.87 | 556.80 | .157 | 214.33 | 3655.79 | 5397.13 | 84.67   | .31    | .4153  | 5.180  | .0000 | .0000  | .0000 |
| 90-000                      | 901.31 | 888.10 | 6166.53 | 564.54 | .160 | 214.61 | 3665.29 | 5481.58 | 84.76   | .31    | .4152  | 5.178  | .0000 | .0000  | .0000 |
| 105-000                     | 900.83 | 887.27 | 6166.18 | 572.26 | .162 | 214.89 | 3674.80 | 5566.11 | 84.84   | .31    | .4150  | 5.175  | .0000 | .0000  | .0000 |
| 110-761                     | 900.34 | 886.42 | 6165.83 | 579.98 | .164 | 215.17 | 3684.33 | 5650.73 | 84.92   | .31    | .4149  | 5.173  | .0000 | .0000  | .0000 |
|                             | 899.95 | 885.75 | 6165.55 | 586.03 | .166 | 215.39 | 3691.80 | 5717.13 | 66.64   | .24    | .4148  | 5.170  | .0000 | .0000  | .0000 |
| 116-771                     | 899.91 | 887.10 | 6166.88 | 555.96 | .157 | 233.60 | 3886.37 | 5717.13 | .00     | .00    | .4149  | 5.170  | .0000 | .0000  | .0000 |
| 131-771                     | 899.48 | 885.37 | 6165.64 | 584.23 | .165 | 223.07 | 3763.01 | 5806.96 | 90.16   | .33    | .4149  | 5.171  | .0000 | .0000  | .0000 |
| 143-919                     | 899.94 | 884.67 | 6164.53 | 607.75 | .172 | 214.55 | 3663.00 | 5876.65 | 69.95   | .26    | .4146  | 5.166  | .0000 | .0000  | .0000 |
| 158-919                     | 899.30 | 883.77 | 6164.27 | 613.20 | .173 | 215.50 | 3686.31 | 5961.17 | 84.83   | .31    | .4145  | 5.163  | .0000 | .0000  | .0000 |
| 173-919                     | 898.65 | 882.86 | 6164.00 | 618.62 | .175 | 216.45 | 3709.65 | 6046.03 | 85.18   | .32    | .4143  | 5.160  | .0000 | .0000  | .0000 |
| 188-919                     | 898.00 | 881.94 | 6163.74 | 624.03 | .176 | 217.40 | 3733.03 | 6131.24 | 85.53   | .32    | .4142  | 5.157  | .0000 | .0000  | .0000 |
| 203-919                     | 897.34 | 881.02 | 6163.47 | 629.43 | .178 | 218.36 | 3756.43 | 6216.79 | 85.87   | .32    | .4140  | 5.155  | .0000 | .0000  | .0000 |
| 218-919                     | 896.67 | 880.09 | 6163.20 | 634.81 | .180 | 219.31 | 3779.86 | 6302.69 | 86.21   | .32    | .4139  | 5.152  | .0000 | .0000  | .0000 |
| 233-919                     | 896.00 | 879.15 | 6162.93 | 640.18 | .181 | 220.26 | 3803.32 | 6388.92 | 86.56   | .32    | .4137  | 5.149  | .0000 | .0000  | .0000 |
| 248-919                     | 895.33 | 878.21 | 6162.66 | 645.54 | .183 | 221.22 | 3826.81 | 6475.50 | 86.90   | .32    | .4136  | 5.146  | .0000 | .0000  | .0000 |
| 263-919                     | 894.65 | 877.26 | 6162.39 | 650.88 | .184 | 222.17 | 3850.33 | 6562.42 | 87.24   | .33    | .4134  | 5.144  | .0000 | .0000  | .0000 |
| 278-919                     | 893.96 | 876.31 | 6162.11 | 656.21 | .186 | 223.12 | 3873.89 | 6649.67 | 87.58   | .33    | .4132  | 5.141  | .0000 | .0000  | .0000 |
| 293-919                     | 893.27 | 875.35 | 6161.84 | 661.53 | .187 | 224.07 | 3897.47 | 6737.27 | 87.93   | .33    | .4131  | 5.138  | .0000 | .0000  | .0000 |
| 308-919                     | 892.58 | 874.38 | 6161.56 | 666.84 | .189 | 225.03 | 3921.08 | 6825.21 | 88.27   | .33    | .4129  | 5.135  | .0000 | .0000  | .0000 |
| 323-919                     | 891.88 | 873.40 | 6161.28 | 672.13 | .190 | 225.98 | 3944.72 | 6913.48 | 88.61   | .33    | .4128  | 5.132  | .0000 | .0000  | .0000 |
| 338-919                     | 891.17 | 872.42 | 6161.00 | 677.41 | .192 | 226.93 | 3968.39 | 7002.10 | 88.95   | .33    | .4126  | 5.129  | .0000 | .0000  | .0000 |
| 353-919                     | 890.45 | 871.44 | 6160.72 | 682.69 | .193 | 227.88 | 3992.09 | 7091.05 | 89.29   | .34    | .4124  | 5.126  | .0000 | .0000  | .0000 |
| 368-919                     | 889.74 | 870.44 | 6160.43 | 687.95 | .195 | 228.84 | 4015.83 | 7180.34 | 89.63   | .34    | .4123  | 5.123  | .0000 | .0000  | .0000 |
| 383-919                     | 889.02 | 869.45 | 6160.15 | 693.20 | .196 | 229.79 | 4039.59 | 7269.96 | 89.96   | .34    | .4121  | 5.121  | .0000 | .0000  | .0000 |
| 398-919                     | 888.29 | 868.44 | 6159.86 | 698.45 | .198 | 230.74 | 4063.38 | 7359.92 | 90.30   | .34    | .4120  | 5.118  | .0000 | .0000  | .0000 |
| 403-048                     | 888.09 | 868.16 | 6159.78 | 699.89 | .198 | 231.01 | 4069.93 | 7384.74 | 24.91   | .09    | .4118  | 5.115  | .0000 | .0000  | .0000 |
| 418-048                     | 887.17 | 867.16 | 6159.67 | 701.80 | .199 | 229.16 | 4112.92 | 7474.57 | 90.17   | .34    | .4117  | 5.114  | .0000 | .0000  | .0000 |
| 427-051                     | 886.63 | 866.56 | 6159.62 | 703.86 | .199 | 228.06 | 4138.96 | 7528.12 | 53.76   | .20    | .4116  | 5.112  | .0000 | .0000  | .0000 |
| 427-061                     | 886.00 | 872.37 | 6165.89 | 578.18 | .164 | 392.45 | 5033.10 | 7528.12 | .00     | .00    | .4124  | 5.119  | .0000 | .0000  | .0000 |
| 442-061                     | 885.31 | 867.31 | 6161.61 | 665.87 | .188 | 318.32 | 4447.10 | 7667.11 | 139.50  | .52    | .4124  | 5.119  | .0000 | .0000  | .0000 |
| 457-061                     | 884.59 | 859.96 | 6155.07 | 783.52 | .221 | 244.20 | 3876.99 | 7777.00 | 110.31  | .42    | .4116  | 5.105  | .0000 | .0000  | .0000 |
| 463-204                     | 884.42 | 858.04 | 6151.36 | 838.70 | .237 | 213.84 | 3639.44 | 7813.55 | 36.69   | .14    | .4104  | 5.086  | .0000 | .0000  | .0000 |
| 478-204                     | 883.46 | 854.77 | 6151.01 | 843.93 | .239 | 214.46 | 3660.68 | 7896.81 | 83.58   | .32    | .4097  | 5.077  | .0000 | .0000  | .0000 |
| 493-204                     | 882.51 | 853.44 | 6150.66 | 849.14 | .240 | 215.08 | 3681.96 | 7980.22 | 83.73   | .32    | .4095  | 5.073  | .0000 | .0000  | .0000 |
| 508-204                     | 881.54 | 852.21 | 6150.31 | 854.33 | .242 | 215.70 | 3703.29 | 8063.82 | 83.93   | .32    | .4093  | 5.069  | .0000 | .0000  | .0000 |
| 523-204                     | 880.57 | 850.92 | 6149.96 | 859.50 | .243 | 216.32 | 3724.65 | 8147.62 | 84.12   | .32    | .4091  | 5.066  | .0000 | .0000  | .0000 |
| 538-204                     | 879.60 | 849.63 | 6149.61 | 864.67 | .245 | 216.94 | 3746.06 | 8231.62 | 84.32   | .32    | .4089  | 5.062  | .0000 | .0000  | .0000 |
| 553-204                     | 878.62 | 848.33 | 6149.26 | 869.81 | .246 | 217.56 | 3767.53 | 8315.81 | 84.52   | .33    | .4086  | 5.058  | .0000 | .0000  | .0000 |
| 568-204                     | 877.64 | 847.03 | 6148.91 | 874.95 | .248 | 218.18 | 3788.99 | 8400.20 | 84.71   | .33    | .4084  | 5.054  | .0000 | .0000  | .0000 |
| 583-204                     | 876.65 | 845.72 | 6148.55 | 880.07 | .249 | 218.80 | 3810.52 | 8484.78 | 84.91   | .33    | .4082  | 5.050  | .0000 | .0000  | .0000 |
| 598-204                     | 875.67 | 844.42 | 6148.20 | 885.18 | .251 | 219.42 | 3832.09 | 8569.55 | 85.10   | .33    | .4080  | 5.046  | .0000 | .0000  | .0000 |
| 613-204                     | 874.67 | 843.10 | 6147.84 | 890.28 | .252 | 220.03 | 3853.70 | 8654.51 | 85.30   | .33    | .4078  | 5.042  | .0000 | .0000  | .0000 |

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|          |        |        |         |        |      |        |         |          |        |      |       |       |       |
|----------|--------|--------|---------|--------|------|--------|---------|----------|--------|------|-------|-------|-------|
| 620.204  | 073.67 | 841.78 | 6147.48 | 895.36 | .254 | 220.65 | 3875.35 | 8739.67  | 85.49  | .33  | .4075 | 5.038 | .000  |
| 643.204  | 872.67 | 840.46 | 6147.12 | 900.43 | .255 | 221.27 | 3897.04 | 8825.02  | 85.68  | .33  | .4073 | 5.035 | .000  |
| 658.204  | 871.66 | 839.14 | 6146.76 | 905.50 | .256 | 221.89 | 3918.77 | 8910.56  | 85.88  | .33  | .4071 | 5.031 | .000  |
| 673.204  | 870.65 | 837.81 | 6146.40 | 910.55 | .258 | 222.51 | 3940.55 | 8996.30  | 86.07  | .34  | .4069 | 5.027 | .000  |
| 688.204  | 869.64 | 836.47 | 6146.04 | 915.59 | .259 | 223.13 | 3962.36 | 9082.22  | 86.26  | .34  | .4066 | 5.023 | .000  |
| 703.204  | 868.62 | 835.13 | 6145.67 | 920.62 | .261 | 223.75 | 3984.22 | 9168.34  | 86.45  | .34  | .4064 | 5.019 | .000  |
| 718.204  | 867.60 | 833.79 | 6145.31 | 925.64 | .262 | 224.37 | 4006.11 | 9254.64  | 86.64  | .34  | .4062 | 5.015 | .000  |
| 726.191  | 867.05 | 833.07 | 6145.11 | 928.30 | .263 | 224.70 | 4017.79 | 9300.66  | 46.21  | .18  | .4060 | 5.012 | .000  |
| 741.191  | 866.31 | 832.92 | 6145.68 | 930.56 | .261 | 226.72 | 4090.55 | 9387.52  | 87.20  | .34  | .4058 | 5.009 | .000  |
| 746.336  | 865.68 | 832.47 | 6145.83 | 918.41 | .260 | 227.41 | 4115.59 | 9417.48  | 30.08  | .12  | .4058 | 5.009 | .000  |
| 746.346  | 864.92 | 841.05 | 6155.29 | 776.95 | .220 | 358.62 | 4822.68 | 9417.48  | .00    | .00  | .4072 | 5.021 | .000  |
| 761.346  | 864.28 | 836.96 | 6151.78 | 832.26 | .236 | 317.47 | 4584.21 | 9547.99  | 131.01 | .50  | .4072 | 5.022 | .000  |
| 776.346  | 863.68 | 832.32 | 6147.65 | 892.97 | .253 | 276.31 | 4344.97 | 9662.52  | 114.97 | .44  | .4065 | 5.012 | .000  |
| 791.346  | 863.16 | 827.02 | 6142.74 | 960.16 | .272 | 235.15 | 4104.96 | 9760.99  | 98.85  | .39  | .4057 | 5.001 | .000  |
| 794.831  | 863.07 | 825.69 | 6141.47 | 976.83 | .277 | 225.59 | 4049.09 | 9781.55  | 20.64  | .08  | .4048 | 4.990 | .000  |
| 809.831  | 861.70 | 824.27 | 6141.35 | 978.31 | .277 | 226.60 | 4085.82 | 9868.29  | 87.08  | .38  | .4046 | 4.988 | .000  |
| 824.831  | 860.34 | 822.85 | 6141.24 | 979.79 | .278 | 227.61 | 4122.63 | 9955.37  | 87.42  | .35  | .4043 | 4.986 | .000  |
| 839.831  | 858.98 | 821.44 | 6141.12 | 981.30 | .278 | 228.63 | 4159.54 | 10042.78 | 87.76  | .35  | .4041 | 4.983 | .000  |
| 854.781  | 857.63 | 820.03 | 6141.01 | 982.80 | .278 | 229.64 | 4196.41 | 10130.23 | 87.80  | .35  | .4038 | 4.981 | .000  |
| 869.781  | 856.69 | 821.56 | 6143.51 | 949.99 | .269 | 234.09 | 4373.06 | 10218.97 | 89.09  | .36  | .4036 | 4.979 | .000  |
| 864.781  | 855.82 | 822.89 | 6145.73 | 919.83 | .260 | 238.54 | 4550.70 | 10309.40 | 90.81  | .37  | .4039 | 4.985 | .000  |
| 889.781  | 855.03 | 824.05 | 6147.72 | 872.03 | .253 | 243.00 | 4729.33 | 10401.60 | 92.57  | .38  | .4041 | 4.990 | .000  |
| 914.781  | 854.27 | 825.07 | 6149.50 | 866.33 | .245 | 247.45 | 4908.96 | 10495.55 | 94.34  | .39  | .4043 | 4.994 | .000  |
| 929.781  | 853.61 | 825.97 | 6151.10 | 842.51 | .238 | 251.90 | 5089.57 | 10591.25 | 96.09  | .39  | .4045 | 4.998 | .000  |
| 944.781  | 852.96 | 826.76 | 6152.56 | 820.37 | .232 | 256.35 | 5271.18 | 10688.70 | 97.85  | .40  | .4046 | 5.001 | .000  |
| 959.781  | 852.36 | 827.46 | 6153.87 | 799.76 | .226 | 260.81 | 5453.79 | 10787.88 | 99.60  | .41  | .4048 | 5.004 | .000  |
| 974.781  | 851.79 | 828.37 | 6155.07 | 780.52 | .221 | 265.26 | 5637.38 | 10888.81 | 101.35 | .42  | .4049 | 5.007 | .000  |
| 989.781  | 851.25 | 828.62 | 6156.17 | 762.54 | .216 | 269.71 | 5821.97 | 10991.48 | 103.09 | .42  | .4050 | 5.009 | .000  |
| 1004.781 | 850.74 | 829.10 | 6157.17 | 745.69 | .211 | 274.17 | 6007.55 | 11095.88 | 104.83 | .43  | .4051 | 5.011 | .000  |
| 1019.781 | 850.25 | 829.52 | 6158.09 | 729.89 | .206 | 278.62 | 6194.12 | 11202.02 | 106.57 | .44  | .4052 | 5.013 | .000  |
| 1034.781 | 849.79 | 829.89 | 6158.93 | 715.03 | .202 | 283.07 | 6381.69 | 11309.59 | 108.31 | .44  | .4052 | 5.015 | .000  |
| 1049.781 | 849.16 | 829.57 | 6159.23 | 709.72 | .201 | 284.06 | 6457.12 | 11353.59 | 43.89  | .18  | .4053 | 5.016 | .000  |
| 1064.781 | 847.95 | 828.78 | 6159.63 | 702.53 | .199 | 287.01 | 6593.09 | 11463.60 | 110.45 | .44  | .4053 | 5.016 | .000  |
| 1079.781 | 846.79 | 828.01 | 6160.01 | 695.70 | .197 | 290.77 | 6729.04 | 11574.72 | 111.56 | .44  | .4051 | 5.016 | .000  |
| 1094.781 | 845.78 | 827.34 | 6160.33 | 689.89 | .195 | 293.40 | 6850.29 | 11674.77 | 100.44 | .39  | .4050 | 5.016 | .000  |
| AF1(A)   | 836.10 | 802.04 | 6131.57 | 946.20 | .268 | .....  | 9626.72 | 12311.24 | 261.75 | .99  | .4056 | 5.027 | ..... |
| AF1(B)   | 836.11 | 836.06 | 6160.00 | -35.78 | .010 | .....  | 4216.11 | 375.72   | 377.03 | 1.31 | .4064 | 5.039 | ..... |



IGNITION TIME, TIME (S) 17.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 13396965.     | 3011757.6    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 14394594.     | 3236533.4    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 76688.169     | 17240.186    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)        | SRMDTI               | .21407886+09  | 48126843.    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 258.16031     | 258.16031    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)           | SRMVTI               | .23199540+09  | 52154641.    |
| THRUST COEFFICIENT                         | CF                   | 1.6315995     | 1.6315995    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 5544.6118     | 12444.239    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 90822.759     | 200229.91    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 41.157984     | 90.737823    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 2474.9356     | 5456.2990    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 307.73206     | 476985.65    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 237.79805     | 14511327.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 415273.47     | 915521.28    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 744.15251     | 1640.5755    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1600240     | 1.1600240    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.897246     | 28.433559    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1562.6742     | 5126.8839    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .25361626     | .25361626    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .62706441+09  | 909.48004    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPHDT                | .10466494+11  | 15180.366    |
| BURN AREA (M**2,IN**2)                     | ABH                  | 119.72291     | 185570.88    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .10563926-01  | .41590261    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .17460940     | 6.8743860    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 24.397974     | 1488855.7    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 30.705858     | 1873786.4    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3427.7299     | 6169.9139    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 172.03293     | 266651.58    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 207.78979     | 12680111.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 82.651625     | 5043711.6    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .58108005+09  | 842.78536    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPONDT               | .94003699+10  | 13634.084    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.976219     | 24763.190    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NT+1,1)          | .10336955-01  | .40696674    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NT+2,1)          | .10350899-01  | .40751572    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NT+1,1)         | .16874913     | 6.6515408    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NT+2,1)         | .16931748     | 6.6660427    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 5.6102899     | 342360.89    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 11.439139     | 698059.11    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NT+2,3)         | 3427.1955     | 6168.9518    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 6.5803761     | 10199.603    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5182731     | 2353.3280    |
| EXPANSION RATIO                            | EPR                  | 7.0794346     | 7.0794346    |
| PRESSURE RATIO                             | PEPU                 | .21923188-01  | .21923188-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANTILOTHROPIC BURN RATE COEFFICIENT        | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA    | DEG. R | T | U      | M    | LP     | INCHES  | AP      | WDOT    | LB/SEC | DWDOT | LB/SEC | DM/DT | RB    | TAU   | IN/SEC | R8TO  | TAUTO |
|-----------------------------|--------|--------|---------|--------|---|--------|------|--------|---------|---------|---------|--------|-------|--------|-------|-------|-------|--------|-------|-------|
|                             | PSIA   |        |         |        |   | FT/SEC |      |        |         | SQ. IN. |         |        |       |        |       |       |       |        |       |       |
| FORE                        | 909.48 | 871.85 | 6169.91 | 461.91 |   |        | .131 | 223.69 | 3981.14 | 4889.23 | 4910.77 | 21.53  | .4171 | 6.874  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 15.000                      | 909.34 | 871.20 | 6168.64 | 462.42 |   |        | .133 | 223.96 | 3980.96 | 4977.47 | 88.54   | .30    | .4156 | 6.850  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 30.000                      | 899.96 | 870.54 | 6169.36 | 476.90 |   |        | .135 | 224.23 | 4079.79 | 5065.81 | 88.64   | .30    | .4155 | 6.847  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 45.000                      | 899.59 | 869.87 | 6169.08 | 484.38 |   |        | .137 | 224.51 | 4010.63 | 5154.23 | 88.72   | .30    | .4154 | 6.844  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 60.000                      | 899.20 | 869.19 | 6168.79 | 491.84 |   |        | .139 | 224.78 | 4020.48 | 5242.73 | 88.81   | .30    | .4153 | 6.841  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 75.000                      | 898.81 | 868.50 | 6168.50 | 499.30 |   |        | .141 | 225.05 | 4030.34 | 5331.32 | 88.89   | .30    | .4152 | 6.838  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 90.000                      | 898.41 | 867.80 | 6168.20 | 506.74 |   |        | .143 | 225.33 | 4040.21 | 5419.99 | 88.98   | .30    | .4151 | 6.835  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 105.000                     | 898.01 | 867.09 | 6167.90 | 514.16 |   |        | .145 | 225.60 | 4050.08 | 5508.75 | 89.06   | .30    | .4150 | 6.832  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 116.761                     | 897.69 | 866.52 | 6167.67 | 519.98 |   |        | .147 | 225.81 | 4057.84 | 5578.39 | 69.88   | .24    | .4149 | 6.829  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 116.771                     | 897.66 | 867.60 | 6168.73 | 492.89 |   |        | .139 | 237.09 | 4276.36 | 5578.39 | .00     | .00    | .4149 | 6.830  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 131.771                     | 898.01 | 866.93 | 6167.75 | 517.76 |   |        | .146 | 230.41 | 4138.96 | 5670.39 | 92.31   | .32    | .4149 | 6.830  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 143.919                     | 898.37 | 866.35 | 6166.86 | 539.38 |   |        | .152 | 225.00 | 4027.58 | 5742.96 | 72.82   | .25    | .4148 | 6.825  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 158.919                     | 897.84 | 865.59 | 6166.62 | 544.80 |   |        | .154 | 225.94 | 4052.42 | 5831.67 | 89.01   | .31    | .4147 | 6.821  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 173.919                     | 897.31 | 864.82 | 6166.39 | 550.20 |   |        | .156 | 226.89 | 4077.28 | 5920.72 | 89.36   | .31    | .4146 | 6.818  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 188.919                     | 896.78 | 864.05 | 6166.16 | 555.58 |   |        | .157 | 227.84 | 4102.15 | 6010.12 | 89.71   | .31    | .4145 | 6.815  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 203.919                     | 896.24 | 863.27 | 6165.92 | 560.95 |   |        | .159 | 228.79 | 4127.05 | 6099.86 | 90.05   | .31    | .4144 | 6.811  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 218.919                     | 895.69 | 862.48 | 6165.68 | 566.30 |   |        | .160 | 229.73 | 4151.96 | 6189.95 | 90.40   | .31    | .4142 | 6.808  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 233.919                     | 895.14 | 861.69 | 6165.44 | 571.64 |   |        | .162 | 230.68 | 4176.89 | 6280.38 | 90.74   | .31    | .4141 | 6.805  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 248.919                     | 894.58 | 860.90 | 6165.20 | 576.96 |   |        | .163 | 231.63 | 4201.83 | 6371.16 | 91.09   | .31    | .4140 | 6.801  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 263.919                     | 894.02 | 860.09 | 6164.96 | 582.26 |   |        | .165 | 232.57 | 4226.80 | 6462.28 | 91.43   | .32    | .4138 | 6.798  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 278.919                     | 893.46 | 859.28 | 6164.72 | 587.55 |   |        | .166 | 233.52 | 4251.78 | 6553.74 | 91.78   | .32    | .4137 | 6.794  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 293.919                     | 892.88 | 858.47 | 6164.47 | 592.82 |   |        | .168 | 234.47 | 4276.74 | 6645.54 | 92.12   | .32    | .4136 | 6.791  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 308.919                     | 892.31 | 857.65 | 6164.22 | 598.08 |   |        | .169 | 235.42 | 4301.80 | 6737.69 | 92.46   | .32    | .4134 | 6.788  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 323.919                     | 891.73 | 856.82 | 6163.97 | 603.33 |   |        | .171 | 236.36 | 4326.84 | 6830.17 | 92.81   | .32    | .4133 | 6.784  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 338.919                     | 891.14 | 855.99 | 6163.72 | 608.56 |   |        | .172 | 237.31 | 4351.89 | 6923.00 | 93.15   | .32    | .4132 | 6.781  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 353.919                     | 890.55 | 855.15 | 6163.47 | 613.78 |   |        | .174 | 238.26 | 4376.96 | 7016.16 | 93.49   | .32    | .4130 | 6.777  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 368.919                     | 889.96 | 854.30 | 6163.22 | 618.99 |   |        | .175 | 239.21 | 4402.05 | 7109.67 | 93.83   | .33    | .4129 | 6.774  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 383.919                     | 889.36 | 853.45 | 6162.96 | 624.18 |   |        | .177 | 240.15 | 4427.16 | 7203.51 | 94.17   | .33    | .4128 | 6.770  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 398.919                     | 888.75 | 852.59 | 6162.71 | 629.37 |   |        | .178 | 241.10 | 4452.28 | 7297.70 | 94.51   | .33    | .4126 | 6.766  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 403.048                     | 888.58 | 852.35 | 6162.64 | 630.79 |   |        | .178 | 241.36 | 4459.20 | 7323.68 | 26.07   | .09    | .4125 | 6.763  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 418.048                     | 887.87 | 851.50 | 6162.49 | 633.85 |   |        | .179 | 239.52 | 4494.03 | 7417.74 | 94.39   | .33    | .4124 | 6.762  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 427.051                     | 887.44 | 850.98 | 6162.40 | 635.59 |   |        | .180 | 238.41 | 4523.18 | 7473.83 | 56.29   | .20    | .4123 | 6.759  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 427.051                     | 886.76 | 846.31 | 6168.23 | 505.60 |   |        | .143 | 399.35 | 5056.92 | 7473.83 | .00     | .00    | .4131 | 6.770  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 442.061                     | 886.17 | 845.72 | 6164.72 | 587.35 |   |        | .166 | 326.66 | 4983.23 | 7616.05 | 142.72  | .50    | .4131 | 6.770  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 457.061                     | 885.49 | 845.78 | 6159.17 | 697.00 |   |        | .197 | 253.96 | 4299.28 | 7729.70 | 114.05  | .40    | .4124 | 6.752  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 463.204                     | 885.31 | 862.29 | 6155.92 | 753.89 |   |        | .213 | 224.19 | 3999.25 | 7767.95 | 38.38   | .14    | .4113 | 6.729  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 478.204                     | 884.52 | 861.21 | 6155.61 | 759.11 |   |        | .215 | 224.80 | 4021.35 | 7855.47 | 87.83   | .31    | .4108 | 6.717  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 493.204                     | 883.73 | 860.12 | 6155.29 | 764.30 |   |        | .216 | 225.42 | 4043.48 | 7943.14 | 87.99   | .31    | .4106 | 6.713  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 508.204                     | 882.94 | 859.03 | 6154.98 | 769.48 |   |        | .218 | 226.03 | 4065.65 | 8031.02 | 88.19   | .31    | .4104 | 6.708  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 523.204                     | 882.14 | 857.94 | 6154.67 | 774.64 |   |        | .219 | 226.64 | 4087.85 | 8119.09 | 88.39   | .31    | .4102 | 6.703  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 538.204                     | 881.33 | 856.84 | 6154.35 | 779.79 |   |        | .221 | 227.25 | 4110.08 | 8207.36 | 88.59   | .31    | .4100 | 6.699  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 553.204                     | 880.52 | 855.73 | 6154.03 | 784.94 |   |        | .222 | 227.86 | 4132.34 | 8295.83 | 88.78   | .32    | .4099 | 6.694  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 568.204                     | 879.71 | 854.62 | 6153.72 | 790.04 |   |        | .224 | 228.47 | 4154.64 | 8384.50 | 88.96   | .32    | .4097 | 6.689  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 583.204                     | 878.89 | 853.51 | 6153.40 | 795.14 |   |        | .225 | 229.08 | 4176.97 | 8473.36 | 89.18   | .32    | .4095 | 6.685  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 598.204                     | 878.07 | 852.39 | 6153.08 | 800.22 |   |        | .226 | 229.70 | 4199.33 | 8562.42 | 89.38   | .32    | .4093 | 6.680  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |
| 613.204                     | 877.25 | 851.27 | 6152.76 | 805.30 |   |        | .228 | 230.31 | 4221.72 | 8651.68 | 89.58   | .32    | .4091 | 6.675  | .0000 | .0000 | .0000 | .0000  | .0000 | .0000 |

|          |        |        |         |        |      |        |          |          |        |      |       |       |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|------|-------|-------|-------|-------|
| 628.204  | 876.42 | 850.14 | 6152.43 | 810.35 | .229 | 230.72 | 4244.14  | 8741.13  | 89.77  | .32  | .4089 | 6.670 | .0000 | .000  |
| 643.204  | 875.59 | 849.01 | 6152.11 | 815.40 | .231 | 231.53 | 4266.60  | 8830.78  | 89.97  | .32  | .4087 | 6.666 | .0000 | .000  |
| 658.204  | 874.75 | 847.87 | 6151.79 | 820.43 | .232 | 232.14 | 4289.09  | 8920.62  | 90.17  | .32  | .4085 | 6.661 | .0000 | .000  |
| 673.204  | 873.91 | 846.73 | 6151.46 | 825.45 | .234 | 232.75 | 4311.61  | 9010.66  | 90.36  | .32  | .4083 | 6.656 | .0000 | .000  |
| 688.204  | 873.06 | 845.58 | 6151.13 | 830.46 | .235 | 233.36 | 4334.16  | 9100.89  | 90.56  | .33  | .4082 | 6.651 | .0000 | .000  |
| 703.204  | 872.21 | 844.44 | 6150.80 | 835.45 | .236 | 233.98 | 4356.74  | 9191.31  | 90.75  | .33  | .4080 | 6.647 | .0000 | .000  |
| 718.204  | 871.36 | 843.28 | 6150.48 | 840.43 | .238 | 234.59 | 4379.36  | 9281.93  | 90.94  | .33  | .4078 | 6.642 | .0000 | .000  |
| 728.191  | 870.50 | 842.67 | 6150.30 | 843.08 | .239 | 234.91 | 4391.42  | 9330.26  | 91.51  | .17  | .4076 | 6.637 | .0000 | .000  |
| 741.191  | 870.28 | 842.46 | 6150.70 | 837.11 | .237 | 236.94 | 4467.38  | 9421.43  | 91.51  | .33  | .4075 | 6.635 | .0000 | .000  |
| 746.336  | 869.76 | 842.07 | 6150.81 | 835.42 | .236 | 237.63 | 4493.50  | 9452.88  | 31.56  | .11  | .4074 | 6.635 | .0000 | .000  |
| 740.346  | 868.92 | 850.07 | 6159.66 | 887.98 | .195 | 365.47 | 5412.91  | 9452.88  | .00    | .00  | .4087 | 6.652 | .0000 | .000  |
| 761.346  | 868.37 | 846.49 | 6156.61 | 742.16 | .210 | 325.34 | 5107.82  | 9586.76  | 134.36 | .48  | .4087 | 6.653 | .0000 | .000  |
| 776.346  | 867.85 | 842.31 | 6152.92 | 802.69 | .227 | 285.21 | 4801.71  | 9705.00  | 118.67 | .42  | .4081 | 6.640 | .0000 | .000  |
| 791.346  | 867.36 | 837.37 | 6148.41 | 871.08 | .247 | 245.08 | 4494.58  | 9607.54  | 102.90 | .37  | .4074 | 6.626 | .0000 | .000  |
| 794.831  | 867.27 | 836.11 | 6147.22 | 888.27 | .252 | 235.75 | 4423.08  | 9829.10  | 21.64  | .08  | .4066 | 6.611 | .0000 | .000  |
| 809.831  | 866.14 | 834.88 | 6147.09 | 890.11 | .252 | 236.77 | 4461.27  | 9920.16  | 91.40  | .33  | .4064 | 6.609 | .0000 | .000  |
| 824.831  | 865.00 | 833.66 | 6146.96 | 891.96 | .253 | 237.78 | 4499.53  | 10011.57 | 91.74  | .33  | .4061 | 6.605 | .0000 | .000  |
| 839.831  | 863.87 | 832.45 | 6146.82 | 893.82 | .253 | 238.79 | 4537.95  | 10103.33 | 92.09  | .33  | .4059 | 6.602 | .0000 | .000  |
| 854.781  | 862.75 | 831.23 | 6146.69 | 895.68 | .254 | 239.80 | 4576.11  | 10195.11 | 92.12  | .34  | .4057 | 6.599 | .0000 | .000  |
| 869.781  | 861.98 | 832.43 | 6148.67 | 887.21 | .246 | 244.26 | 4764.20  | 10288.21 | 93.44  | .34  | .4055 | 6.596 | .0000 | .000  |
| 884.781  | 861.26 | 833.47 | 6150.43 | 841.11 | .238 | 248.71 | 4952.56  | 10383.02 | 95.16  | .35  | .4057 | 6.603 | .0000 | .000  |
| 899.781  | 860.60 | 834.37 | 6152.00 | 817.11 | .231 | 253.17 | 5141.19  | 10479.58 | 96.92  | .36  | .4059 | 6.609 | .0000 | .000  |
| 914.781  | 859.98 | 835.16 | 6153.41 | 794.98 | .225 | 257.63 | 5330.09  | 10577.90 | 98.69  | .37  | .4061 | 6.614 | .0000 | .000  |
| 929.781  | 859.41 | 835.84 | 6154.67 | 774.51 | .219 | 262.08 | 5519.27  | 10677.97 | 100.44 | .38  | .4062 | 6.618 | .0000 | .000  |
| 944.781  | 858.86 | 836.44 | 6155.82 | 755.55 | .214 | 266.54 | 5708.71  | 10779.78 | 102.20 | .38  | .4063 | 6.622 | .0000 | .000  |
| 959.781  | 858.35 | 836.96 | 6156.85 | 737.94 | .209 | 270.99 | 5898.43  | 10883.34 | 103.95 | .39  | .4064 | 6.625 | .0000 | .000  |
| 974.781  | 857.86 | 837.41 | 6157.80 | 721.55 | .204 | 275.45 | 6088.42  | 10988.64 | 105.70 | .39  | .4065 | 6.628 | .0000 | .000  |
| 989.781  | 857.40 | 837.81 | 6158.66 | 706.27 | .200 | 279.90 | 6278.69  | 11095.69 | 107.44 | .40  | .4066 | 6.631 | .0000 | .000  |
| 1004.781 | 856.95 | 838.15 | 6159.45 | 691.99 | .196 | 284.36 | 6469.22  | 11204.47 | 109.18 | .40  | .4067 | 6.633 | .0000 | .000  |
| 1019.781 | 856.53 | 838.45 | 6160.17 | 678.63 | .192 | 288.81 | 6660.03  | 11314.98 | 110.93 | .41  | .4067 | 6.636 | .0000 | .000  |
| 1034.781 | 856.12 | 838.70 | 6160.83 | 666.12 | .188 | 293.27 | 6851.11  | 11427.24 | 112.67 | .41  | .4068 | 6.637 | .0000 | .000  |
| 1049.781 | 855.59 | 838.42 | 6161.07 | 661.62 | .187 | 295.05 | 6927.74  | 11472.70 | 45.63  | .17  | .4068 | 6.639 | .0000 | .000  |
| 1065.791 | 854.55 | 837.71 | 6161.39 | 655.47 | .185 | 298.01 | 7068.82  | 11587.09 | 114.80 | .42  | .4068 | 6.639 | .0000 | .000  |
| 1070.791 | 853.54 | 837.01 | 6161.68 | 649.67 | .184 | 300.96 | 7209.41  | 11702.59 | 115.92 | .42  | .4066 | 6.638 | .0000 | .000  |
| 1084.171 | 852.67 | 836.41 | 6161.93 | 644.76 | .182 | 303.59 | 7334.39  | 11806.54 | 104.34 | .38  | .4065 | 6.638 | .0000 | .000  |
| AF11A1   | 842.80 | 808.26 | 6132.61 | 949.22 | .269 | .....  | 10199.60 | 12444.24 | 269.85 | .97  | .4070 | 6.652 | ..... | ..... |
| AF11B1   | 842.81 | 842.78 | 6168.95 | -30.68 | .609 | .....  | 4789.00  | 368.82   | 370.09 | 1.27 | .4075 | 6.656 | ..... | ..... |





IGNITION TIME, TIME (S) 21.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 13463246.     | 3026658.1    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 14410166.     | 3239534.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 67230.752     | 15114.074    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | .26788208+09  | 60222467.    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 258.19380     | 258.19380    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .28969083+09  | 65125089.    |
| THRUST COEFFICIENT                         | CF                   | 1.6300915     | 1.6300915    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 5655.0999     | 12467.361    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 113457.18     | 250130.27    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MI                   | 36.082257     | 79.547760    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 2325.6060     | 5127.0837    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 308.58743     | 478311.47    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 224.84650     | 13720914.    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 392553.27     | 865431.81    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 819.89951     | 1807.5690    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1600156     | 1.1600156    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.896162     | 28.431170    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1562.6672     | 5126.8609    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .23156580     | .23156580    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .62096103+09  | 900.62784    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .12964986+11  | 18804.123    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 113.61464     | 176103.65    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .10545419+01  | .41517398    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .21686110     | 8.5378385    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 19.458633     | 1187438.7    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 35.645198     | 2175203.5    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3428.1887     | 6170.7396    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 179.12605     | 277645.93    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 200.43547     | 12231323.    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 90.906202     | 5492515.4    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .58055293+09  | 842.02084    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDY               | .11727126+11  | 17008.758    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 15.846737     | 24562.492    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .10338025+01  | .40700888    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .10347614+01  | .40738638    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .21031993     | 8.2803123    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .21073954     | 8.2968322    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 4.9514024     | 302153.11    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 12.098027     | 738266.89    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3427.1422     | 6168.8560    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 6.9626464     | 10792.124    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5227028     | 2360.1941    |
| EXPANSION RATIO                            | EPR                  | 7.0586396     | 7.0588396    |
| PRESSURE RATIO                             | PEPO                 | .22807557+01  | .22807557+01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKNST                | .37810250+01  | .37810250+01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

ORIGINAL FROM ID  
OF ROOM 071076

INCREMENT DIVIDING PLANE DATA:

| PO      | P      | T      | U       | M      | LP      | AP     | NDOT    | DWDOT   | DM/DT  | RB     | TAU   | RBTO   | TAUTO |
|---------|--------|--------|---------|--------|---------|--------|---------|---------|--------|--------|-------|--------|-------|
| PSIA    | PSIA   | DEG. R | FT/SEC  | INCHES | SQ. IN. | LB/SEC | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.   | IN/SEC | IN.   |
| FORE    | 900.63 | 887.39 | 6170.74 | 401.27 | .113    | 234.13 | 4629.03 | 4648.15 | 19.12  | .4160  | 8.538 | .0000  | .000  |
| 15.000  | 893.73 | 886.86 | 6170.51 | 408.54 | .115    | 234.40 | 4721.26 | 92.51   | .29    | .4149  | 8.512 | .0000  | .000  |
| 30.000  | 893.43 | 886.31 | 6170.27 | 415.80 | .118    | 234.67 | 4813.58 | 92.61   | .29    | .4148  | 8.509 | .0000  | .000  |
| 45.000  | 893.12 | 885.75 | 6170.03 | 423.05 | .120    | 234.95 | 4905.99 | 92.69   | .29    | .4147  | 8.506 | .0000  | .000  |
| 60.000  | 892.81 | 885.19 | 6169.79 | 430.28 | .122    | 235.22 | 4998.48 | 92.78   | .29    | .4146  | 8.503 | .0000  | .000  |
| 75.000  | 892.49 | 884.62 | 6169.54 | 437.50 | .124    | 235.49 | 5091.06 | 92.87   | .29    | .4146  | 8.499 | .0000  | .000  |
| 90.000  | 892.17 | 884.03 | 6169.29 | 444.71 | .126    | 235.76 | 5183.73 | 92.95   | .29    | .4145  | 8.496 | .0000  | .000  |
| 105.000 | 891.84 | 883.44 | 6169.04 | 451.90 | .128    | 236.03 | 5276.48 | 93.04   | .29    | .4144  | 8.492 | .0000  | .000  |
| 116.761 | 891.57 | 882.77 | 6168.83 | 457.54 | .129    | 236.24 | 5349.26 | 73.01   | .23    | .4143  | 8.489 | .0000  | .000  |
| 116.771 | 891.55 | 883.80 | 6169.65 | 434.36 | .123    | 243.20 | 5349.26 | .00     | .00    | .4143  | 8.490 | .0000  | .000  |
| 131.771 | 891.80 | 883.24 | 6168.87 | 456.56 | .129    | 238.90 | 5444.02 | 95.05   | .30    | .4143  | 8.490 | .0000  | .000  |
| 143.719 | 892.05 | 882.75 | 6168.17 | 475.55 | .134    | 235.43 | 5519.51 | 75.73   | .24    | .4142  | 8.484 | .0000  | .000  |
| 156.719 | 891.62 | 882.12 | 6167.97 | 480.99 | .136    | 236.37 | 5612.22 | 92.99   | .29    | .4142  | 8.480 | .0000  | .000  |
| 173.719 | 891.19 | 881.48 | 6167.76 | 486.41 | .137    | 237.31 | 5705.27 | 93.34   | .29    | .4140  | 8.476 | .0000  | .000  |
| 188.719 | 890.75 | 880.83 | 6167.55 | 491.82 | .139    | 238.26 | 5798.67 | 93.69   | .29    | .4139  | 8.473 | .0000  | .000  |
| 203.719 | 890.31 | 880.17 | 6167.34 | 497.20 | .141    | 239.20 | 5892.42 | 94.04   | .29    | .4138  | 8.469 | .0000  | .000  |
| 218.719 | 889.86 | 879.51 | 6167.13 | 502.56 | .142    | 240.14 | 5986.51 | 94.39   | .29    | .4137  | 8.465 | .0000  | .000  |
| 233.719 | 889.41 | 878.88 | 6166.92 | 507.90 | .144    | 241.09 | 6080.95 | 94.73   | .30    | .4136  | 8.461 | .0000  | .000  |
| 248.719 | 888.95 | 878.18 | 6166.70 | 513.23 | .145    | 242.03 | 6175.73 | 95.08   | .30    | .4135  | 8.457 | .0000  | .000  |
| 263.719 | 888.49 | 877.50 | 6166.49 | 518.54 | .147    | 242.97 | 6270.86 | 95.43   | .30    | .4134  | 8.453 | .0000  | .000  |
| 278.719 | 888.03 | 876.81 | 6166.27 | 523.83 | .148    | 243.92 | 6366.33 | 95.77   | .30    | .4133  | 8.449 | .0000  | .000  |
| 293.719 | 887.56 | 876.12 | 6166.05 | 529.10 | .150    | 244.86 | 6462.14 | 96.12   | .30    | .4132  | 8.446 | .0000  | .000  |
| 308.719 | 887.08 | 875.43 | 6165.83 | 534.36 | .151    | 245.81 | 6558.30 | 96.46   | .30    | .4131  | 8.442 | .0000  | .000  |
| 323.719 | 886.60 | 874.73 | 6165.61 | 539.60 | .153    | 246.75 | 6654.80 | 96.81   | .30    | .4129  | 8.438 | .0000  | .000  |
| 338.719 | 886.12 | 874.02 | 6165.38 | 544.83 | .154    | 247.69 | 6751.65 | 97.15   | .31    | .4128  | 8.434 | .0000  | .000  |
| 353.719 | 885.63 | 873.31 | 6165.16 | 550.04 | .156    | 248.64 | 6848.83 | 97.49   | .31    | .4127  | 8.430 | .0000  | .000  |
| 368.719 | 885.14 | 872.59 | 6164.93 | 555.24 | .157    | 249.58 | 6946.36 | 97.84   | .31    | .4126  | 8.425 | .0000  | .000  |
| 383.719 | 884.64 | 871.86 | 6164.70 | 560.43 | .158    | 250.52 | 7044.23 | 98.18   | .31    | .4125  | 8.421 | .0000  | .000  |
| 398.719 | 884.14 | 871.13 | 6164.48 | 565.60 | .160    | 251.47 | 7142.44 | 98.52   | .31    | .4124  | 8.417 | .0000  | .000  |
| 403.048 | 884.00 | 870.93 | 6164.41 | 567.02 | .160    | 251.73 | 7169.53 | 27.18   | .09    | .4122  | 8.413 | .0000  | .000  |
| 418.048 | 883.44 | 870.20 | 6164.24 | 570.94 | .161    | 249.88 | 7267.62 | 98.40   | .31    | .4122  | 8.412 | .0000  | .000  |
| 427.051 | 883.10 | 869.76 | 6164.13 | 573.21 | .162    | 248.78 | 7326.13 | 58.70   | .19    | .4121  | 8.409 | .0000  | .000  |
| 427.061 | 882.43 | 874.39 | 6169.29 | 444.55 | .126    | 405.99 | 7326.13 | .00     | .00    | .4128  | 8.422 | .0000  | .000  |
| 442.061 | 881.94 | 870.97 | 6168.44 | 519.77 | .147    | 334.84 | 7471.19 | 145.52  | .47    | .4128  | 8.423 | .0000  | .000  |
| 457.061 | 881.32 | 865.64 | 6161.81 | 622.46 | .176    | 263.68 | 7588.30 | 117.50  | .38    | .4122  | 8.402 | .0000  | .000  |
| 473.204 | 881.14 | 862.65 | 6159.04 | 676.58 | .191    | 234.54 | 7628.16 | 39.98   | .13    | .4113  | 8.375 | .0000  | .000  |
| 488.204 | 880.49 | 861.73 | 6158.76 | 681.83 | .193    | 235.15 | 7719.74 | 91.88   | .30    | .4108  | 8.361 | .0000  | .000  |
| 493.204 | 879.84 | 860.80 | 6158.48 | 687.05 | .194    | 235.75 | 7811.49 | 92.04   | .30    | .4107  | 8.356 | .0000  | .000  |
| 508.204 | 879.18 | 859.87 | 6158.19 | 692.25 | .196    | 236.36 | 7903.44 | 92.25   | .30    | .4105  | 8.350 | .0000  | .000  |
| 523.204 | 878.52 | 858.94 | 6157.91 | 697.43 | .197    | 236.97 | 7995.59 | 92.45   | .30    | .4104  | 8.345 | .0000  | .000  |
| 538.204 | 877.86 | 858.00 | 6157.63 | 702.60 | .199    | 237.57 | 8087.94 | 92.65   | .30    | .4102  | 8.340 | .0000  | .000  |
| 553.204 | 877.19 | 857.06 | 6157.34 | 707.75 | .200    | 238.18 | 8180.50 | 92.85   | .30    | .4101  | 8.334 | .0000  | .000  |
| 568.204 | 876.51 | 856.11 | 6157.05 | 712.86 | .202    | 238.78 | 8273.25 | 93.05   | .30    | .4099  | 8.329 | .0000  | .000  |
| 583.204 | 875.84 | 855.16 | 6156.76 | 718.00 | .203    | 239.39 | 8366.20 | 93.25   | .30    | .4097  | 8.323 | .0000  | .000  |
| 598.204 | 875.16 | 854.20 | 6156.47 | 723.10 | .205    | 239.99 | 8459.35 | 93.45   | .30    | .4096  | 8.318 | .0000  | .000  |
| 613.204 | 874.47 | 853.24 | 6156.18 | 728.19 | .206    | 240.60 | 8552.70 | 93.65   | .30    | .4094  | 8.312 | .0000  | .000  |

|          |        |        |         |        |      |        |          |          |        |      |       |       |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|------|-------|-------|-------|------|
| 628.204  | 873.78 | 852.27 | 6155.09 | 733.26 | .207 | 241.20 | 4630.83  | 8646.24  | 93.85  | .30  | .4093 | 8.307 | .0000 | .000 |
| 643.204  | 873.09 | 851.30 | 6155.60 | 738.31 | .209 | 241.81 | 4654.36  | 8739.99  | 94.03  | .31  | .4091 | 8.301 | .0000 | .000 |
| 658.204  | 872.39 | 850.33 | 6155.30 | 743.35 | .210 | 242.42 | 4677.32  | 8833.93  | 94.25  | .31  | .4089 | 8.296 | .0000 | .000 |
| 673.204  | 871.69 | 849.35 | 6155.01 | 748.38 | .212 | 243.02 | 4700.60  | 8928.07  | 94.45  | .31  | .4088 | 8.290 | .0000 | .000 |
| 688.204  | 870.98 | 848.36 | 6154.71 | 753.40 | .213 | 243.63 | 4723.90  | 9022.40  | 94.64  | .31  | .4086 | 8.285 | .0000 | .000 |
| 703.204  | 869.27 | 847.38 | 6154.41 | 758.40 | .215 | 244.23 | 4747.23  | 9116.93  | 94.84  | .31  | .4084 | 8.280 | .0000 | .000 |
| 718.204  | 868.56 | 846.38 | 6154.11 | 763.38 | .216 | 244.84 | 4770.57  | 9211.66  | 95.04  | .31  | .4083 | 8.274 | .0000 | .000 |
| 723.191  | 867.86 | 845.85 | 6153.95 | 768.03 | .217 | 245.16 | 4783.01  | 9262.17  | 95.24  | .17  | .4081 | 8.269 | .0000 | .000 |
| 741.191  | 867.91 | 844.85 | 6154.18 | 762.24 | .216 | 247.18 | 4862.20  | 9357.47  | 95.60  | .31  | .4080 | 8.266 | .0000 | .000 |
| 746.336  | 867.49 | 844.51 | 6154.26 | 760.98 | .215 | 247.88 | 4889.40  | 9390.33  | 32.96  | .11  | .4078 | 8.266 | .0000 | .000 |
| 746.346  | 866.65 | 851.61 | 6162.19 | 614.02 | .174 | 372.92 | 6016.86  | 9390.33  | .00    | .50  | .4090 | 8.288 | .0000 | .000 |
| 761.346  | 866.15 | 848.53 | 6159.60 | 665.98 | .188 | 333.66 | 5646.47  | 9527.40  | 137.52 | .44  | .4090 | 8.288 | .0000 | .000 |
| 776.346  | 865.67 | 844.85 | 6156.38 | 724.77 | .205 | 294.39 | 5274.83  | 9649.17  | 122.16 | .39  | .4085 | 8.273 | .0000 | .000 |
| 791.346  | 865.21 | 840.41 | 6152.35 | 792.16 | .224 | 255.12 | 4901.93  | 9755.56  | 106.74 | .34  | .4078 | 8.257 | .0000 | .000 |
| 794.831  | 865.14 | 834.26 | 6151.27 | 809.27 | .229 | 245.99 | 4815.11  | 9778.07  | 22.58  | .07  | .4071 | 8.239 | .0000 | .000 |
| 809.831  | 864.19 | 838.20 | 6151.13 | 811.47 | .230 | 247.00 | 4854.79  | 9873.24  | 95.48  | .31  | .4069 | 8.235 | .0000 | .000 |
| 824.831  | 863.24 | 837.15 | 6150.98 | 813.68 | .230 | 248.00 | 4894.50  | 9968.76  | 95.83  | .31  | .4067 | 8.231 | .0000 | .000 |
| 839.831  | 862.30 | 836.09 | 6150.84 | 815.89 | .231 | 249.01 | 4934.26  | 10064.62 | 96.17  | .31  | .4065 | 8.227 | .0000 | .000 |
| 854.781  | 861.37 | 835.04 | 6150.70 | 818.11 | .232 | 250.01 | 4973.91  | 10160.51 | 96.50  | .31  | .4064 | 8.223 | .0000 | .000 |
| 869.781  | 860.72 | 835.97 | 6152.27 | 793.39 | .225 | 254.47 | 5173.54  | 10257.73 | 97.53  | .32  | .4062 | 8.219 | .0000 | .000 |
| 864.781  | 860.13 | 836.76 | 6153.66 | 770.79 | .218 | 258.93 | 5372.70  | 10356.66 | 99.25  | .32  | .4063 | 8.227 | .0000 | .000 |
| 899.781  | 859.57 | 837.45 | 6154.91 | 750.06 | .212 | 263.38 | 5571.40  | 10457.34 | 101.01 | .33  | .4065 | 8.234 | .0000 | .000 |
| 914.781  | 859.05 | 838.04 | 6156.02 | 731.01 | .207 | 267.84 | 5769.63  | 10559.77 | 102.77 | .34  | .4066 | 8.239 | .0000 | .000 |
| 929.781  | 858.56 | 838.55 | 6157.02 | 713.44 | .202 | 272.30 | 5967.39  | 10663.95 | 104.52 | .34  | .4067 | 8.244 | .0000 | .000 |
| 944.781  | 858.10 | 838.98 | 6157.92 | 697.20 | .197 | 276.75 | 6164.69  | 10769.88 | 106.27 | .35  | .4068 | 8.248 | .0000 | .000 |
| 959.781  | 857.66 | 839.36 | 6158.74 | 682.17 | .193 | 281.21 | 6361.52  | 10877.54 | 108.02 | .35  | .4069 | 8.252 | .0000 | .000 |
| 974.781  | 857.23 | 839.68 | 6159.48 | 666.22 | .189 | 285.67 | 6557.89  | 10986.95 | 109.76 | .36  | .4069 | 8.255 | .0000 | .000 |
| 989.781  | 856.83 | 839.95 | 6160.16 | 655.26 | .185 | 290.12 | 6753.79  | 11098.09 | 111.51 | .36  | .4070 | 8.258 | .0000 | .000 |
| 1004.781 | 856.45 | 840.19 | 6160.78 | 643.20 | .182 | 294.59 | 6949.22  | 11210.98 | 113.25 | .36  | .4070 | 8.261 | .0000 | .000 |
| 1019.781 | 856.07 | 840.38 | 6161.34 | 631.95 | .179 | 299.04 | 7144.19  | 11325.59 | 114.98 | .37  | .4071 | 8.263 | .0000 | .000 |
| 1034.781 | 854.91 | 839.72 | 6161.83 | 622.06 | .176 | 303.50 | 7338.69  | 11441.95 | 116.72 | .36  | .4071 | 8.266 | .0000 | .000 |
| 1049.791 | 854.46 | 839.46 | 6162.02 | 618.28 | .175 | 305.28 | 7416.49  | 11489.05 | 47.25  | .14  | .4070 | 8.267 | .0000 | .000 |
| 1055.791 | 853.56 | 838.82 | 6162.27 | 613.07 | .173 | 308.23 | 7562.72  | 11607.51 | 118.81 | .36  | .4069 | 8.267 | .0000 | .000 |
| 1070.791 | 852.68 | 838.20 | 6162.50 | 608.19 | .172 | 311.18 | 7707.97  | 11727.08 | 119.93 | .36  | .4068 | 8.266 | .0000 | .000 |
| 1084.171 | 851.93 | 837.65 | 6162.70 | 604.10 | .171 | 313.81 | 7836.70  | 11834.67 | 107.92 | .33  | .4067 | 8.265 | .0000 | .000 |
| 1111(A)  | 842.03 | 807.31 | 6132.56 | 952.21 | .270 | .....  | 10792.12 | 12467.36 | 276.39 | .83  | .4070 | 8.280 | .0000 | .000 |
| 1111(B)  | 642.05 | 842.03 | 6168.86 | -26.46 | .807 | .....  | 5381.52  | 357.13   | 358.26 | 1.13 | .4074 | 8.297 | .0000 | .000 |

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## INTERFACE

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**Address:** 600-700 Ave. Duquesne

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**FILE**

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LB/SEC

FORWARDED

AFI

| Age Group | Percentage of Respondents |
|-----------|---------------------------|
| 18-29     | 85%                       |
| 30-49     | 80%                       |
| 50-69     | 75%                       |
| 70+       | 70%                       |

**GAS BUILD**

CHENARD

1.45

100

07108 Sys

100

0444400

IGNITION TIME, TIME (S)

25.000000

| PARAMETER DESCRIPTION (UNITS)               | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH     |
|---------------------------------------------|----------------------|---------------|-------------|
| MOTOR PARAMETERS:                           |                      |               |             |
| TOTAL DELIVERED THRUST (N,LBF)              | FTDEL                | 12225936.     | 2748493.1   |
| TOTAL VACUUM THRUST (N,LBF)                 | FTVAC                | 13113132.     | 2947949.3   |
| THRUST CONTRIBUTION OF INERTS (N,LBF)       | FI                   | 54465.085     | 12244.238   |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)         | SRMDTI               | 331866017+09  | 71637656.   |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)         | TISP                 | 257.89252     | 257.89252   |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)            | SRMVTI               | 334413844+09  | 77365400.   |
| THRUST COEFFICIENT                          | CF                   | 1.5200826     | 1.6288826   |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/ST) | WDOT                 | 5155.7480     | 11366.479   |
| FLOWRATE INTEGRAL (KG,LBM)                  | SWDOTN               | 134834.50     | 297259.19   |
| INERT MASS FLOWRATE (KG/S,LBM/S)            | HIF                  | 29.231016     | 64.443359   |
| INERT MASS REMAINING (KG,LBM)               | MIR                  | 2201.9910     | 4854.5610   |
| TOTAL BURN AREA (M**2,IN**2)                | ABTOT                | 290.62178     | 450464.66   |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)        | VF                   | 212.54643     | 12970379.   |
| PROPELLANT MASS REMAINING (KG,LBM)          | WF                   | 371166.85     | 818282.84   |
| TOTAL GAS MASS (KG,LBM)                     | WGTOT                | 811.55601     | 1789.1747   |
| RATIO OF SPECIFIC HEATS                     | GAMA                 | 1.1599305     | 1.1599305   |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)  | AMW                  | 12.885185     | 28.406970   |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)  | CSTAR                | 1561.7980     | 5124.0092   |
| MAXIMUM CHAMBER MACH NUMBER                 | AMPN                 | 20893091      | 20893091    |
| HEAD END PARAMETERS:                        |                      |               |             |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)           | PH                   | 55916478+09   | 810.99995   |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)    | SPHDT                | 15296822+11   | 22186.165   |
| BURN AREA (M**2,IN**2)                      | AHH                  | 88.808808     | 137653.93   |
| BURN RATE (M/S,IN/S)                        | RBZ(1)               | 10187296-01   | 40107464    |
| DISTANCE BURNED (M,IN)                      | TAUZ(1)              | 25852336      | 10.178085   |
| PROPELLANT VOLUME (M**3,IN**3)              | VFH                  | 15.359430     | 937289.91   |
| GAS VOLUME (M**3,IN**3)                     | VPH                  | 39.744402     | 2425352.2   |
| GAS STATIC TEMPERATURE (DEG K,DEG R)        | PRNT(1,3)            | 3422.6835     | 6160.8303   |
| CYLINDRICAL SECTION PARAMETERS:             |                      |               |             |
| RADIAL BURN AREA (M**2,IN**2)               | ABCYL                | 186.15802     | 288545.51   |
| SEGMENT FACE BURN AREA (M**2,IN**2)         | ABSLT                | 0.0000000     | 0.0000000   |
| PROPELLANT VOLUME (M**3,IN**3)              | VFCYL                | 192.87949     | 11770229.   |
| GAS VOLUME (M**3,IN**3)                     | VP                   | 97.562485     | 5953628.1   |
| AFT END PARAMETERS:                         |                      |               |             |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)   | PUN                  | 52720175+09   | 764.64149   |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)    | SPONDT               | 13918317+11   | 20186.812   |
| BURN AREA (M**2,IN**2)                      | AAN                  | 15.654949     | 24265.219   |
| BURN RATE, REGION A (M/S,IN/SEC)            | RBZ(IN+1,1)          | 99987302-02   | 39365080    |
| BURN RATE, REGION B (M/S,IN/SEC)            | RBZ(IN+2,1)          | 10004326-01   | 39387111    |
| DISTANCE BURNED, REGION A (M,IN)            | TAUZ(IN+1,1)         | 25118116      | 9.8890222   |
| DISTANCE BURNED, REGION B (M,IN)            | TAUZ(IN+2,1)         | 25152453      | 9.9068714   |
| PROPELLANT VOLUME (M**3,IN**3)              | VPN                  | 403075078     | 262860.25   |
| GAS VOLUME (M**3,IN**3)                     | VPN                  | 12.741921     | 777559.75   |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)      | PRNT(IN+2,3)         | 3419.2612     | 6154.8702   |
| PORT AREA, NOZ ENT (M**2,IN**2)             | AZA                  | 7.3509741     | 11394.033   |
| NOZZLE PARAMETERS:                          |                      |               |             |
| THROAT AREA (M**2,IN**2)                    | AT                   | 1.5270027     | 2366.8589   |
| EXPANSION RATIO                             | EPR                  | 7.0389628     | 7.0389628   |
| PRESSURE RATIO                              | PEPO                 | 22093719-01   | 22093719-01 |
| MISCELLANEOUS PARAMETERS:                   |                      |               |             |
| ANISOTROPIC BURN RATE COEFFICIENT           | AKRST                | 37810250-01   | 37810250-01 |
| NUMBER OF PRESSURE ITERATIONS               | ANLPS                | 2.0000000     | 2.0000000   |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | FO     | P      | PSIA    | DEG. R | T    | U      | M       | LP      | AP      | WDOT   | LB/SEC | DW/DT  | RB     | TAU  | IN/SEC | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|---------|---------|---------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   |        |         |        |      | FT/SEC |         | INCHES  | SQ. IN. | LB/SEC | LB/SEC |        | IN/SEC | IN.  | IN/SEC | IN.   |
| FLUE                        | 811.00 | 803.98 | 6160.83 | 306.94 | .087 | 244.39 | 4753.90 | 3499.17 | 3506.18 | 7.02   | .4014  | 10.178 | .0000  | .000 | .000   | .000  |
| 15.000                      | 807.29 | 803.60 | 6160.64 | 314.55 | .089 | 244.66 | 4764.47 | 3572.35 | 93.28   | .10    | .4008  | 10.152 | .0000  | .000 | .000   | .000  |
| 30.000                      | 807.09 | 803.21 | 6160.45 | 322.15 | .091 | 244.94 | 4775.04 | 3685.64 | 93.38   | .10    | .4008  | 10.148 | .0000  | .000 | .000   | .000  |
| 45.000                      | 806.87 | 802.82 | 6160.26 | 329.74 | .093 | 245.21 | 4785.62 | 3779.01 | 93.47   | .10    | .4007  | 10.144 | .0000  | .000 | .000   | .000  |
| 60.000                      | 806.66 | 802.41 | 6160.06 | 337.31 | .095 | 245.49 | 4796.21 | 3872.47 | 93.56   | .10    | .4006  | 10.141 | .0000  | .000 | .000   | .000  |
| 75.000                      | 806.43 | 802.00 | 6159.86 | 344.86 | .098 | 245.76 | 4806.80 | 3966.02 | 93.65   | .10    | .4006  | 10.137 | .0000  | .000 | .000   | .000  |
| 90.000                      | 806.20 | 801.58 | 6159.65 | 352.40 | .100 | 246.04 | 4817.39 | 4059.66 | 93.73   | .10    | .4005  | 10.133 | .0000  | .000 | .000   | .000  |
| 105.000                     | 805.97 | 801.15 | 6159.44 | 359.92 | .102 | 246.31 | 4827.99 | 4153.39 | 93.82   | .10    | .4004  | 10.129 | .0000  | .000 | .000   | .000  |
| 110.761                     | 805.78 | 800.80 | 6159.27 | 365.82 | .103 | 246.53 | 4836.31 | 4226.93 | 73.62   | .08    | .4003  | 10.126 | .0000  | .000 | .000   | .000  |
| 116.771                     | 805.77 | 801.26 | 6159.77 | 348.12 | .098 | 251.92 | 5079.70 | 4226.93 | .00     | .00    | .4003  | 10.127 | .0000  | .000 | .000   | .000  |
| 131.771                     | 805.87 | 800.85 | 6159.23 | 367.15 | .104 | 248.46 | 4927.03 | 4322.17 | 95.33   | .09    | .4003  | 10.127 | .0000  | .000 | .000   | .000  |
| 143.719                     | 805.96 | 800.49 | 6158.75 | 383.38 | .108 | 245.66 | 4803.26 | 4398.33 | 76.23   | .08    | .4003  | 10.121 | .0000  | .000 | .000   | .000  |
| 158.719                     | 805.67 | 800.02 | 6158.57 | 389.50 | .110 | 246.61 | 4831.18 | 4491.99 | 93.76   | .10    | .4002  | 10.116 | .0000  | .000 | .000   | .000  |
| 173.919                     | 805.36 | 799.54 | 6158.38 | 395.59 | .112 | 247.55 | 4859.09 | 4586.00 | 94.10   | .10    | .4001  | 10.112 | .0000  | .000 | .000   | .000  |
| 188.919                     | 805.06 | 799.06 | 6158.19 | 401.66 | .114 | 248.49 | 4886.99 | 4680.34 | 94.44   | .10    | .4000  | 10.108 | .0000  | .000 | .000   | .000  |
| 203.919                     | 804.74 | 798.57 | 6158.00 | 407.70 | .115 | 249.44 | 4914.88 | 4775.03 | 94.78   | .10    | .4000  | 10.104 | .0000  | .000 | .000   | .000  |
| 218.919                     | 804.43 | 798.07 | 6157.80 | 413.71 | .117 | 250.38 | 4942.77 | 4870.05 | 95.12   | .10    | .3999  | 10.100 | .0000  | .000 | .000   | .000  |
| 233.919                     | 804.10 | 797.57 | 6157.60 | 419.70 | .119 | 251.32 | 4970.65 | 4965.41 | 95.46   | .10    | .3998  | 10.096 | .0000  | .000 | .000   | .000  |
| 248.919                     | 803.78 | 797.05 | 6157.41 | 425.66 | .120 | 252.27 | 4998.52 | 5061.11 | 95.80   | .10    | .3997  | 10.091 | .0000  | .000 | .000   | .000  |
| 263.919                     | 803.45 | 796.54 | 6157.21 | 431.60 | .122 | 253.21 | 5026.39 | 5157.15 | 96.14   | .10    | .3996  | 10.087 | .0000  | .000 | .000   | .000  |
| 278.919                     | 803.11 | 796.01 | 6157.03 | 437.51 | .124 | 254.16 | 5054.25 | 5253.52 | 96.47   | .10    | .3995  | 10.083 | .0000  | .000 | .000   | .000  |
| 293.919                     | 802.77 | 795.48 | 6156.82 | 443.40 | .125 | 255.10 | 5082.10 | 5350.23 | 96.81   | .10    | .3994  | 10.078 | .0000  | .000 | .000   | .000  |
| 308.919                     | 802.42 | 794.95 | 6156.59 | 449.27 | .127 | 256.04 | 5109.94 | 5447.28 | 97.15   | .10    | .3993  | 10.074 | .0000  | .000 | .000   | .000  |
| 323.919                     | 802.07 | 794.41 | 6156.38 | 455.12 | .129 | 256.99 | 5137.77 | 5544.66 | 97.48   | .10    | .3992  | 10.069 | .0000  | .000 | .000   | .000  |
| 338.919                     | 801.72 | 793.86 | 6156.17 | 460.95 | .130 | 257.93 | 5165.60 | 5642.38 | 97.82   | .10    | .3991  | 10.065 | .0000  | .000 | .000   | .000  |
| 353.919                     | 801.36 | 793.30 | 6155.96 | 466.76 | .132 | 258.87 | 5193.42 | 5740.43 | 98.15   | .10    | .3991  | 10.060 | .0000  | .000 | .000   | .000  |
| 368.919                     | 800.99 | 792.74 | 6155.75 | 472.55 | .134 | 259.82 | 5221.24 | 5838.82 | 98.49   | .10    | .3990  | 10.056 | .0000  | .000 | .000   | .000  |
| 383.919                     | 800.62 | 792.18 | 6155.53 | 478.32 | .135 | 260.76 | 5249.04 | 5937.54 | 98.82   | .10    | .3989  | 10.051 | .0000  | .000 | .000   | .000  |
| 398.919                     | 800.25 | 791.60 | 6155.31 | 484.07 | .137 | 261.71 | 5276.84 | 6036.59 | 99.15   | .10    | .3988  | 10.047 | .0000  | .000 | .000   | .000  |
| 403.048                     | 800.15 | 791.44 | 6155.25 | 485.65 | .137 | 261.97 | 5284.49 | 6063.91 | 27.35   | .03    | .3987  | 10.042 | .0000  | .000 | .000   | .000  |
| 418.048                     | 799.75 | 790.87 | 6155.06 | 490.80 | .139 | 260.12 | 5318.07 | 6162.85 | 99.04   | .10    | .3986  | 10.041 | .0000  | .000 | .000   | .000  |
| 427.051                     | 799.51 | 790.52 | 6154.94 | 493.81 | .140 | 259.01 | 5338.47 | 6221.89 | 59.10   | .06    | .3985  | 10.037 | .0000  | .000 | .000   | .000  |
| 437.061                     | 799.00 | 793.77 | 6158.97 | 375.79 | .106 | 413.85 | 6990.86 | 6221.89 | .00     | .00    | .3990  | 10.053 | .0000  | .000 | .000   | .000  |
| 442.061                     | 798.61 | 791.40 | 6156.83 | 442.49 | .125 | 343.65 | 6090.32 | 6365.54 | 143.84  | .19    | .3990  | 10.054 | .0000  | .000 | .000   | .000  |
| 457.061                     | 798.12 | 787.62 | 6156.30 | 534.36 | .151 | 273.45 | 5157.61 | 6482.53 | 117.13  | .15    | .3986  | 10.031 | .0000  | .000 | .000   | .000  |
| 463.204                     | 797.95 | 785.47 | 6151.15 | 583.20 | .165 | 244.70 | 4736.34 | 6522.70 | 40.22   | .05    | .3979  | 10.001 | .0000  | .000 | .000   | .000  |
| 478.204                     | 797.47 | 784.74 | 6150.88 | 589.06 | .167 | 245.31 | 4796.21 | 6615.34 | 92.75   | .11    | .3976  | 9.985  | .0000  | .000 | .000   | .000  |
| 483.204                     | 796.98 | 784.01 | 6150.61 | 594.89 | .168 | 245.91 | 4814.09 | 6708.16 | 92.92   | .11    | .3974  | 9.979  | .0000  | .000 | .000   | .000  |
| 508.204                     | 796.49 | 783.27 | 6150.33 | 605.70 | .170 | 246.52 | 4837.98 | 6801.17 | 93.12   | .11    | .3973  | 9.973  | .0000  | .000 | .000   | .000  |
| 523.204                     | 795.99 | 782.52 | 6150.06 | 616.48 | .172 | 247.12 | 4861.89 | 6894.38 | 93.32   | .11    | .3972  | 9.967  | .0000  | .000 | .000   | .000  |
| 538.204                     | 795.49 | 781.78 | 6149.78 | 612.25 | .173 | 247.73 | 4885.81 | 6987.79 | 93.51   | .11    | .3970  | 9.961  | .0000  | .000 | .000   | .000  |
| 553.204                     | 794.98 | 781.02 | 6149.50 | 617.99 | .175 | 248.33 | 4909.64 | 7081.40 | 93.71   | .11    | .3969  | 9.955  | .0000  | .000 | .000   | .000  |
| 568.204                     | 794.47 | 780.26 | 6149.22 | 623.72 | .176 | 248.93 | 4933.67 | 7175.20 | 93.91   | .11    | .3968  | 9.949  | .0000  | .000 | .000   | .000  |
| 583.204                     | 793.95 | 779.50 | 6148.94 | 629.42 | .178 | 249.54 | 4957.65 | 7269.20 | 94.10   | .11    | .3966  | 9.943  | .0000  | .000 | .000   | .000  |
| 598.204                     | 793.43 | 778.73 | 6148.66 | 635.11 | .180 | 250.14 | 4981.62 | 7363.39 | 94.30   | .11    | .3965  | 9.937  | .0000  | .000 | .000   | .000  |
| 613.204                     | 792.91 | 777.95 | 6148.37 | 640.78 | .181 | 250.75 | 5005.61 | 7457.78 | 94.50   | .11    | .3964  | 9.931  | .0000  | .000 | .000   | .000  |

|          |        |        |         |        |      |        |         |          |        |     |       |       |       |      |
|----------|--------|--------|---------|--------|------|--------|---------|----------|--------|-----|-------|-------|-------|------|
| 628.204  | 792.38 | 777.17 | 6148.09 | 646.43 | .183 | 251.35 | 5029.61 | 7552.37  | 94.69  | .11 | .3962 | 9.925 | .0000 | .000 |
| 643.204  | 791.85 | 776.38 | 6147.80 | 652.06 | .185 | 251.96 | 5053.63 | 7647.15  | 94.69  | .11 | .3961 | 9.919 | .0000 | .000 |
| 658.204  | 791.31 | 775.59 | 6147.51 | 657.67 | .186 | 252.56 | 5077.66 | 7742.12  | 95.08  | .11 | .3960 | 9.912 | .0000 | .000 |
| 673.204  | 790.77 | 774.79 | 6147.22 | 663.27 | .188 | 253.17 | 5101.70 | 7837.29  | 95.27  | .11 | .3958 | 9.906 | .0000 | .000 |
| 688.204  | 790.22 | 773.99 | 6146.93 | 668.85 | .189 | 253.77 | 5125.76 | 7932.65  | 95.47  | .11 | .3957 | 9.900 | .0000 | .000 |
| 703.204  | 789.67 | 773.19 | 6146.63 | 674.41 | .191 | 254.37 | 5149.83 | 8028.20  | 95.66  | .11 | .3955 | 9.894 | .0000 | .000 |
| 718.204  | 789.12 | 772.39 | 6146.34 | 679.96 | .192 | 254.98 | 5173.91 | 8123.95  | 95.85  | .11 | .3954 | 9.888 | .0000 | .000 |
| 733.204  | 788.58 | 771.54 | 6146.04 | 685.51 | .193 | 255.58 | 5198.00 | 8219.01  | 96.04  | .06 | .3952 | 9.882 | .0000 | .000 |
| 748.204  | 788.03 | 770.74 | 6145.74 | 691.04 | .193 | 256.18 | 5222.18 | 8314.01  | 96.23  | .11 | .3951 | 9.876 | .0000 | .000 |
| 763.204  | 787.48 | 770.24 | 6145.44 | 696.57 | .193 | 256.78 | 5246.36 | 8409.01  | 96.41  | .11 | .3950 | 9.870 | .0000 | .000 |
| 778.204  | 786.93 | 769.74 | 6145.14 | 702.10 | .193 | 257.38 | 5270.54 | 8504.01  | 96.60  | .11 | .3949 | 9.864 | .0000 | .000 |
| 793.204  | 786.38 | 769.24 | 6144.84 | 707.63 | .193 | 257.98 | 5294.72 | 8600.01  | 96.79  | .11 | .3948 | 9.858 | .0000 | .000 |
| 808.204  | 785.83 | 768.74 | 6144.54 | 713.16 | .193 | 258.58 | 5318.90 | 8695.01  | 96.98  | .11 | .3947 | 9.852 | .0000 | .000 |
| 823.204  | 785.28 | 768.24 | 6144.24 | 718.69 | .193 | 259.18 | 5343.08 | 8790.01  | 97.17  | .11 | .3946 | 9.846 | .0000 | .000 |
| 838.204  | 784.73 | 767.74 | 6143.94 | 724.22 | .193 | 259.78 | 5367.26 | 8885.01  | 97.36  | .11 | .3945 | 9.840 | .0000 | .000 |
| 853.204  | 784.18 | 767.24 | 6143.64 | 729.75 | .193 | 260.38 | 5391.44 | 8980.01  | 97.55  | .11 | .3944 | 9.834 | .0000 | .000 |
| 868.204  | 783.63 | 766.74 | 6143.34 | 735.28 | .193 | 260.98 | 5415.62 | 9075.01  | 97.74  | .11 | .3943 | 9.828 | .0000 | .000 |
| 883.204  | 783.08 | 766.24 | 6143.04 | 740.81 | .193 | 261.58 | 5439.80 | 9170.01  | 97.93  | .11 | .3942 | 9.822 | .0000 | .000 |
| 898.204  | 782.53 | 765.74 | 6142.74 | 746.34 | .193 | 262.18 | 5463.98 | 9265.01  | 98.12  | .11 | .3941 | 9.816 | .0000 | .000 |
| 913.204  | 781.98 | 765.24 | 6142.44 | 751.87 | .193 | 262.78 | 5488.16 | 9360.01  | 98.31  | .11 | .3940 | 9.810 | .0000 | .000 |
| 928.204  | 781.43 | 764.74 | 6142.14 | 757.40 | .193 | 263.38 | 5512.34 | 9455.01  | 98.50  | .11 | .3939 | 9.804 | .0000 | .000 |
| 943.204  | 780.88 | 764.24 | 6141.84 | 762.93 | .193 | 263.98 | 5536.52 | 9550.01  | 98.69  | .11 | .3938 | 9.798 | .0000 | .000 |
| 958.204  | 780.33 | 763.74 | 6141.54 | 768.46 | .193 | 264.58 | 5560.70 | 9645.01  | 98.88  | .11 | .3937 | 9.792 | .0000 | .000 |
| 973.204  | 779.78 | 763.24 | 6141.24 | 773.99 | .193 | 265.18 | 5584.88 | 9740.01  | 99.07  | .11 | .3936 | 9.786 | .0000 | .000 |
| 988.204  | 779.23 | 762.74 | 6140.94 | 779.52 | .193 | 265.78 | 5609.06 | 9835.01  | 99.26  | .11 | .3935 | 9.780 | .0000 | .000 |
| 1003.204 | 778.68 | 762.24 | 6140.64 | 785.05 | .193 | 266.38 | 5633.24 | 9930.01  | 99.45  | .11 | .3934 | 9.774 | .0000 | .000 |
| 1018.204 | 778.13 | 761.74 | 6140.34 | 790.58 | .193 | 266.98 | 5657.42 | 10025.01 | 99.64  | .11 | .3933 | 9.768 | .0000 | .000 |
| 1033.204 | 777.58 | 761.24 | 6140.04 | 796.11 | .193 | 267.58 | 5681.60 | 10120.01 | 99.83  | .11 | .3932 | 9.762 | .0000 | .000 |
| 1048.204 | 777.03 | 760.74 | 6139.74 | 801.64 | .193 | 268.18 | 5705.78 | 10215.01 | 100.02 | .11 | .3931 | 9.756 | .0000 | .000 |
| 1063.204 | 776.48 | 760.24 | 6139.44 | 807.17 | .193 | 268.78 | 5729.96 | 10310.01 | 100.21 | .11 | .3930 | 9.750 | .0000 | .000 |
| 1078.204 | 775.93 | 759.74 | 6139.14 | 812.70 | .193 | 269.38 | 5754.14 | 10405.01 | 100.40 | .11 | .3929 | 9.744 | .0000 | .000 |
| 1093.204 | 775.38 | 759.24 | 6138.84 | 818.23 | .193 | 269.98 | 5778.32 | 10500.01 | 100.59 | .11 | .3928 | 9.738 | .0000 | .000 |
| 1108.204 | 774.83 | 758.74 | 6138.54 | 823.76 | .193 | 270.58 | 5802.50 | 10595.01 | 100.78 | .11 | .3927 | 9.732 | .0000 | .000 |
| 1123.204 | 774.28 | 758.24 | 6138.24 | 829.29 | .193 | 271.18 | 5826.68 | 10690.01 | 100.97 | .11 | .3926 | 9.726 | .0000 | .000 |
| 1138.204 | 773.73 | 757.74 | 6137.94 | 834.82 | .193 | 271.78 | 5850.86 | 10785.01 | 101.16 | .11 | .3925 | 9.720 | .0000 | .000 |
| 1153.204 | 773.18 | 757.24 | 6137.64 | 840.35 | .193 | 272.38 | 5875.04 | 10880.01 | 101.35 | .11 | .3924 | 9.714 | .0000 | .000 |
| 1168.204 | 772.63 | 756.74 | 6137.34 | 845.88 | .193 | 272.98 | 5899.22 | 10975.01 | 101.54 | .11 | .3923 | 9.708 | .0000 | .000 |
| 1183.204 | 772.08 | 756.24 | 6137.04 | 851.41 | .193 | 273.58 | 5923.40 | 11070.01 | 101.73 | .11 | .3922 | 9.702 | .0000 | .000 |
| 1198.204 | 771.53 | 755.74 | 6136.74 | 856.94 | .193 | 274.18 | 5947.58 | 11165.01 | 101.92 | .11 | .3921 | 9.696 | .0000 | .000 |
| 1213.204 | 770.98 | 755.24 | 6136.44 | 862.47 | .193 | 274.78 | 5971.76 | 11260.01 | 102.11 | .11 | .3920 | 9.690 | .0000 | .000 |
| 1228.204 | 770.43 | 754.74 | 6136.14 | 868.00 | .193 | 275.38 | 5995.94 | 11355.01 | 102.30 | .11 | .3919 | 9.684 | .0000 | .000 |
| 1243.204 | 769.88 | 754.24 | 6135.84 | 873.53 | .193 | 275.98 | 6020.12 | 11450.01 | 102.49 | .11 | .3918 | 9.678 | .0000 | .000 |
| 1258.204 | 769.33 | 753.74 | 6135.54 | 879.06 | .193 | 276.58 | 6044.30 | 11545.01 | 102.68 | .11 | .3917 | 9.672 | .0000 | .000 |
| 1273.204 | 768.78 | 753.24 | 6135.24 | 884.59 | .193 | 277.18 | 6068.48 | 11640.01 | 102.87 | .11 | .3916 | 9.666 | .0000 | .000 |
| 1288.204 | 768.23 | 752.74 | 6134.94 | 890.12 | .193 | 277.78 | 6092.66 | 11735.01 | 103.06 | .11 | .3915 | 9.660 | .0000 | .000 |
| 1303.204 | 767.68 | 752.24 | 6134.64 | 895.65 | .193 | 278.38 | 6116.84 | 11830.01 | 103.25 | .11 | .3914 | 9.654 | .0000 | .000 |
| 1318.204 | 767.13 | 751.74 | 6134.34 | 901.18 | .193 | 278.98 | 6141.02 | 11925.01 | 103.44 | .11 | .3913 | 9.648 | .0000 | .000 |
| 1333.204 | 766.58 | 751.24 | 6134.04 | 906.71 | .193 | 279.58 | 6165.20 | 12020.01 | 103.63 | .11 | .3912 | 9.642 | .0000 | .000 |
| 1348.204 | 766.03 | 750.74 | 6133.74 | 912.24 | .193 | 280.18 | 6189.38 | 12115.01 | 103.82 | .11 | .3911 | 9.636 | .0000 | .000 |
| 1363.204 | 765.48 | 750.24 | 6133.44 | 917.77 | .193 | 280.78 | 6213.56 | 12210.01 | 104.01 | .11 | .3910 | 9.630 | .0000 | .000 |
| 1378.204 | 764.93 | 749.74 | 6133.14 | 923.30 | .193 | 281.38 | 6237.74 | 12305.01 | 104.20 | .11 | .3909 | 9.624 | .0000 | .000 |
| 1393.204 | 764.38 | 749.24 | 6132.84 | 928.83 | .193 | 281.98 | 6261.92 | 12400.01 | 104.39 | .11 | .3908 | 9.618 | .0000 | .000 |
| 1408.204 | 763.83 | 748.74 | 6132.54 | 934.36 | .193 | 282.58 | 6286.10 | 12495.01 | 104.58 | .11 | .3907 | 9.612 | .0000 | .000 |
| 1423.204 | 763.28 | 748.24 | 6132.24 | 939.89 | .193 | 283.18 | 6310.28 | 12590.01 | 104.77 | .11 | .3906 | 9.606 | .0000 | .000 |
| 1438.204 | 762.73 | 747.74 | 6131.94 | 945.42 | .193 | 283.78 | 6334.46 | 12685.01 | 104.96 | .11 | .3905 | 9.600 | .0000 | .000 |
| 1453.204 | 762.18 | 747.24 | 6131.64 | 950.95 | .193 | 284.38 | 6358.64 | 12780.01 | 105.15 | .11 | .3904 | 9.594 | .0000 | .000 |
| 1468.204 | 761.63 | 746.74 | 6131.34 | 956.48 | .193 | 284.98 | 6382.82 | 12875.01 | 105.34 | .11 | .3903 | 9.588 | .0000 | .000 |
| 1483.204 | 761.08 | 746.24 | 6131.04 | 962.01 | .193 | 285.58 | 6407.00 | 12970.01 | 105.53 | .11 | .3902 | 9.582 | .0000 | .000 |
| 1498.204 | 760.53 | 745.74 | 6130.74 | 967.54 | .193 | 286.18 | 6431.18 | 13065.01 | 105.72 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1513.204 | 760.48 | 745.69 | 6130.69 | 968.07 | .193 | 286.69 | 6436.71 | 13070.01 | 105.77 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1528.204 | 760.43 | 745.64 | 6130.64 | 968.60 | .193 | 286.74 | 6442.24 | 13075.01 | 105.82 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1543.204 | 760.38 | 745.59 | 6130.59 | 969.13 | .193 | 286.79 | 6447.77 | 13080.01 | 105.87 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1558.204 | 760.33 | 745.54 | 6130.54 | 969.66 | .193 | 286.84 | 6453.30 | 13085.01 | 105.92 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1573.204 | 760.28 | 745.49 | 6130.49 | 970.19 | .193 | 286.89 | 6458.83 | 13090.01 | 105.97 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1588.204 | 760.23 | 745.44 | 6130.44 | 970.72 | .193 | 286.94 | 6464.36 | 13095.01 | 106.02 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1603.204 | 760.18 | 745.39 | 6130.39 | 971.25 | .193 | 286.99 | 6469.89 | 13100.01 | 106.07 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1618.204 | 760.13 | 745.34 | 6130.34 | 971.78 | .193 | 287.04 | 6475.42 | 13105.01 | 106.12 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1633.204 | 760.08 | 745.29 | 6130.29 | 972.31 | .193 | 287.09 | 6480.95 | 13110.01 | 106.17 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1648.204 | 760.03 | 745.24 | 6130.24 | 972.84 | .193 | 287.14 | 6486.48 | 13115.01 | 106.22 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1663.204 | 760.47 | 745.68 | 6130.68 | 973.27 | .193 | 287.57 | 6491.91 | 13120.01 | 106.26 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1678.204 | 760.92 | 746.13 | 6131.13 | 973.70 | .193 | 288.00 | 6497.34 | 13125.01 | 106.30 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1693.204 | 761.37 | 746.58 | 6131.58 | 974.13 | .193 | 288.43 | 6502.77 | 13130.01 | 106.34 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1708.204 | 761.82 | 747.03 | 6132.03 | 974.56 | .193 | 288.86 | 6508.20 | 13135.01 | 106.38 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1723.204 | 762.27 | 747.48 | 6132.48 | 975.42 | .193 | 289.72 | 6514.63 | 13140.01 | 106.42 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1738.204 | 762.72 | 747.93 | 6132.93 | 976.28 | .193 | 290.58 | 6521.06 | 13145.01 | 106.46 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1753.204 | 763.17 | 748.38 | 6133.38 | 977.14 | .193 | 291.44 | 6527.49 | 13150.01 | 106.50 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1768.204 | 763.62 | 748.83 | 6133.83 | 978.00 | .193 | 292.30 | 6533.92 | 13155.01 | 106.54 | .11 | .3901 | 9.576 | .0000 | .000 |
| 1783.204 |        |        |         |        |      |        |         |          |        |     |       |       |       |      |





IGNITION TIME, TIME (S)

29.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 11615851.     | 2611347.3    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 12435584.     | 2795626.1    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 46925.006     | 10436.757    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMDTI               | .36627872+09  | 82342732.    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TIISP                | 257.98568     | 257.98568    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .39517258+09  | 88838329.    |
| THRUST COEFFICIENT                                              | CF                   | 1.6278327     | 1.6278327    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/ST)                     | WDOT                 | 4893.3748     | 10781.431    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 154897.86     | 341491.33    |
| INERT MASS FLOWRATE (KG/S,LBM/ST)                               | MIF                  | 24.915964     | 54.930298    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 2098.2626     | 4625.8771    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 281.13057     | 435753.26    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 201.03145     | 12267691.    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 351083.41     | 774006.44    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 826.94899     | 1823.1105    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1598829     | 1.1598829    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.876934     | 28.388779    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1561.2363     | 5122.1663    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .19079014     | .19079014    |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .52598486+09  | 762.87655    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .17463998+11  | 25329.388    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 72.844699     | 112909.51    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .99830907-02  | .39303507    |
| DISTANCE BURNED (M,IN)                                          | TAU4(1)              | .29905185     | 11.773695    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 12.100047     | 738390.16    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 43.503785     | 2624252.0    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3417.7719     | 6151.9895    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 192.91124     | 299013.02    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 185.24146     | 11304128.    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 105.20079     | 6419745.9    |
| <b>APT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .49896648+09  | 723.68970    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .15968072+11  | 23159.730    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 15.374632     | 23830.728    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | .98107317-02  | .38624929    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | .98134346-02  | .38635569    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAU4(NI+1,1)         | .29097253     | 11.455611    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAU4(NI+2,1)         | .29144518     | 11.474220    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | 3.6699385     | 225173.86    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 13.359491     | 815246.14    |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3413.9181     | 6145.0526    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | A2A                  | 7.7372488     | 11992.760    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5310324     | 2373.1049    |
| EXPANSION RATIO                                                 | EPR                  | 7.0204362     | 7.0204362    |
| PRESSURE RATIO                                                  | PEPO                 | .22172814-01  | .22172814-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLPS                | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| PO      | PSIA   | PSIA   | DEG. R  | U      | M    | LP     | AP      | WDOT    | DWDT    | LB/SEC | IN/SEC | TAU    | RBTO   | TAUTO |
|---------|--------|--------|---------|--------|------|--------|---------|---------|---------|--------|--------|--------|--------|-------|
| REGIONS | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SO. IN. | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FUEL    | 762.88 | 758.76 | 6151.99 | 241.08 | .068 | 254.43 | 5151.62 | 2813.10 | 2816.64 | 3.54   | .3932  | 11.774 | .0000  | .000  |
| 15.000  | 760.69 | 758.51 | 6151.84 | 240.79 | .070 | 254.70 | 5162.56 | 2908.18 | 95.17   | .09    | .3928  | 11.746 | .0000  | .000  |
| 30.000  | 760.54 | 758.22 | 6151.69 | 256.48 | .073 | 254.97 | 5173.51 | 3003.36 | 95.26   | .09    | .3927  | 11.742 | .0000  | .000  |
| 45.000  | 760.38 | 757.92 | 6151.53 | 264.15 | .075 | 255.24 | 5184.47 | 3098.62 | 95.35   | .09    | .3926  | 11.739 | .0000  | .000  |
| 60.000  | 760.22 | 757.62 | 6151.37 | 271.80 | .077 | 255.51 | 5195.43 | 3193.98 | 95.44   | .09    | .3926  | 11.735 | .0000  | .000  |
| 75.000  | 760.06 | 757.31 | 6151.20 | 279.44 | .079 | 255.78 | 5206.39 | 3289.42 | 95.53   | .09    | .3926  | 11.731 | .0000  | .000  |
| 90.000  | 759.89 | 756.99 | 6151.03 | 287.07 | .081 | 256.05 | 5217.36 | 3384.94 | 95.61   | .09    | .3925  | 11.727 | .0000  | .000  |
| 105.000 | 759.71 | 756.66 | 6150.86 | 294.68 | .083 | 256.32 | 5228.33 | 3480.56 | 95.70   | .09    | .3925  | 11.722 | .0000  | .000  |
| 116.761 | 759.57 | 756.39 | 6150.72 | 300.63 | .085 | 256.53 | 5236.94 | 3555.58 | 75.09   | .07    | .3924  | 11.718 | .0000  | .000  |
| 116.771 | 759.56 | 756.67 | 6151.04 | 286.78 | .081 | 261.00 | 5400.19 | 3555.58 | .00     | .00    | .3924  | 11.720 | .0000  | .000  |
| 131.771 | 759.59 | 756.35 | 6150.65 | 303.42 | .086 | 258.07 | 5330.41 | 3652.43 | 96.93   | .08    | .3924  | 11.720 | .0000  | .000  |
| 143.919 | 759.62 | 756.08 | 6150.31 | 317.59 | .090 | 255.69 | 5202.48 | 3730.05 | 77.69   | .07    | .3923  | 11.713 | .0000  | .000  |
| 158.919 | 759.40 | 755.71 | 6150.15 | 324.04 | .092 | 256.63 | 5231.90 | 3825.62 | 95.65   | .09    | .3923  | 11.709 | .0000  | .000  |
| 173.919 | 759.17 | 755.34 | 6149.98 | 330.46 | .093 | 257.58 | 5261.30 | 3921.52 | 95.99   | .09    | .3922  | 11.704 | .0000  | .000  |
| 186.919 | 758.94 | 754.96 | 6149.81 | 336.85 | .095 | 258.52 | 5290.69 | 4017.75 | 96.32   | .09    | .3922  | 11.700 | .0000  | .000  |
| 203.919 | 758.71 | 754.57 | 6149.64 | 343.21 | .097 | 259.46 | 5320.05 | 4114.32 | 96.66   | .09    | .3921  | 11.695 | .0000  | .000  |
| 216.919 | 758.46 | 754.18 | 6149.47 | 349.54 | .099 | 260.40 | 5349.39 | 4211.22 | 96.99   | .09    | .3920  | 11.691 | .0000  | .000  |
| 233.919 | 758.22 | 753.78 | 6149.29 | 355.84 | .101 | 261.34 | 5378.72 | 4308.46 | 97.32   | .09    | .3920  | 11.686 | .0000  | .000  |
| 248.919 | 757.97 | 753.37 | 6149.12 | 362.11 | .102 | 262.28 | 5408.02 | 4406.02 | 97.66   | .09    | .3919  | 11.682 | .0000  | .000  |
| 263.919 | 757.71 | 752.96 | 6148.94 | 368.35 | .104 | 263.22 | 5437.33 | 4503.92 | 98.32   | .09    | .3918  | 11.677 | .0000  | .000  |
| 278.919 | 757.46 | 752.54 | 6148.76 | 374.57 | .106 | 264.16 | 5466.57 | 4602.15 | 98.32   | .09    | .3917  | 11.672 | .0000  | .000  |
| 293.919 | 757.19 | 752.12 | 6148.57 | 380.76 | .108 | 265.10 | 5495.81 | 4700.72 | 98.65   | .09    | .3917  | 11.668 | .0000  | .000  |
| 308.919 | 756.92 | 751.68 | 6148.39 | 386.92 | .109 | 266.04 | 5525.03 | 4799.61 | 98.98   | .09    | .3916  | 11.663 | .0000  | .000  |
| 323.919 | 756.65 | 751.25 | 6148.20 | 393.06 | .111 | 266.98 | 5554.24 | 4898.83 | 99.31   | .09    | .3915  | 11.658 | .0000  | .000  |
| 338.919 | 756.37 | 750.80 | 6148.01 | 399.17 | .113 | 267.92 | 5583.42 | 4998.39 | 99.64   | .09    | .3914  | 11.653 | .0000  | .000  |
| 353.919 | 756.09 | 750.35 | 6147.81 | 405.27 | .115 | 268.86 | 5612.59 | 5098.27 | 99.97   | .09    | .3913  | 11.648 | .0000  | .000  |
| 368.919 | 755.81 | 749.89 | 6147.62 | 411.33 | .116 | 269.80 | 5641.73 | 5198.40 | 100.30  | .09    | .3913  | 11.643 | .0000  | .000  |
| 383.919 | 755.51 | 749.43 | 6147.42 | 417.38 | .118 | 270.74 | 5670.86 | 5299.02 | 100.63  | .09    | .3912  | 11.638 | .0000  | .000  |
| 398.919 | 755.22 | 748.96 | 6147.22 | 423.41 | .120 | 271.68 | 5699.96 | 5399.89 | 100.96  | .09    | .3911  | 11.634 | .0000  | .000  |
| 403.048 | 755.14 | 748.83 | 6147.17 | 425.06 | .120 | 271.94 | 5707.97 | 5427.71 | 27.85   | .02    | .3910  | 11.629 | .0000  | .000  |
| 418.048 | 754.83 | 748.36 | 6146.97 | 433.90 | .122 | 270.08 | 5738.53 | 5528.48 | 100.85  | .09    | .3910  | 11.627 | .0000  | .000  |
| 427.051 | 754.65 | 748.07 | 6146.85 | 434.34 | .123 | 268.97 | 5757.12 | 5588.61 | 60.19   | .05    | .3909  | 11.623 | .0000  | .000  |
| 427.061 | 754.24 | 750.53 | 6150.09 | 326.01 | .092 | 415.28 | 7649.10 | 5588.61 | .03     | .00    | .3913  | 11.641 | .0000  | .000  |
| 442.061 | 753.94 | 748.76 | 6148.42 | 385.71 | .109 | 348.63 | 6643.42 | 5730.70 | 142.24  | .16    | .3913  | 11.642 | .0000  | .000  |
| 457.061 | 753.54 | 745.90 | 6145.64 | 468.52 | .133 | 281.98 | 5599.99 | 5847.95 | 117.38  | .13    | .3910  | 11.617 | .0000  | .000  |
| 463.204 | 753.39 | 744.25 | 6143.93 | 512.83 | .145 | 254.68 | 5161.78 | 5888.77 | 40.86   | .04    | .3904  | 11.584 | .0000  | .000  |
| 478.204 | 753.01 | 743.65 | 6143.68 | 518.98 | .147 | 255.28 | 5186.52 | 5903.39 | 94.72   | .10    | .3901  | 11.567 | .0000  | .000  |
| 493.204 | 752.62 | 743.05 | 6143.43 | 525.11 | .149 | 255.88 | 5211.26 | 6078.18 | 94.89   | .10    | .3900  | 11.561 | .0000  | .000  |
| 508.204 | 752.23 | 742.44 | 6143.18 | 531.21 | .150 | 256.48 | 5236.01 | 6173.17 | 95.08   | .10    | .3899  | 11.554 | .0000  | .000  |
| 523.204 | 751.83 | 741.82 | 6142.92 | 537.28 | .152 | 257.08 | 5260.77 | 6268.35 | 95.28   | .10    | .3898  | 11.548 | .0000  | .000  |
| 538.204 | 751.43 | 741.20 | 6142.66 | 543.34 | .154 | 257.68 | 5285.52 | 6363.73 | 95.47   | .10    | .3897  | 11.541 | .0000  | .000  |
| 553.204 | 751.02 | 740.57 | 6142.40 | 549.37 | .155 | 258.28 | 5310.29 | 6459.30 | 95.67   | .10    | .3896  | 11.535 | .0000  | .000  |
| 568.204 | 750.61 | 739.94 | 6142.14 | 555.37 | .157 | 258.88 | 5335.05 | 6555.07 | 95.86   | .10    | .3895  | 11.528 | .0000  | .000  |
| 583.204 | 750.20 | 739.30 | 6141.88 | 561.36 | .159 | 259.48 | 5359.82 | 6651.03 | 96.06   | .10    | .3893  | 11.522 | .0000  | .000  |
| 598.204 | 749.78 | 738.66 | 6141.61 | 567.33 | .161 | 260.07 | 5384.60 | 6747.18 | 96.25   | .10    | .3892  | 11.515 | .0000  | .000  |
| 613.204 | 749.35 | 738.21 | 6141.35 | 573.27 | .162 | 260.67 | 5409.38 | 6843.53 | 96.44   | .10    | .3891  | 11.509 | .0000  | .000  |

|          |        |        |         |        |      |        |          |          |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|-----|-------|--------|-------|-------|
| 626.204  | 748.93 | 737.35 | 6141.08 | 579.19 | .164 | 261.27 | 5434.16  | 6946.06  | 96.63  | .10 | .3890 | 11.502 | .0000 | .000  |
| 643.204  | 748.49 | 736.69 | 6140.81 | 585.10 | .166 | 261.87 | 5450.95  | 7036.79  | 96.83  | .10 | .3889 | 11.495 | .0000 | .000  |
| 658.204  | 748.06 | 736.03 | 6140.54 | 590.98 | .167 | 262.47 | 5483.75  | 7133.71  | 97.02  | .10 | .3888 | 11.489 | .0000 | .000  |
| 673.204  | 747.62 | 735.36 | 6140.26 | 596.85 | .169 | 263.07 | 5508.54  | 7230.83  | 97.21  | .10 | .3886 | 11.482 | .0000 | .000  |
| 688.204  | 747.17 | 734.68 | 6139.99 | 602.70 | .171 | 263.67 | 5533.34  | 7328.13  | 97.40  | .10 | .3885 | 11.475 | .0000 | .000  |
| 703.204  | 746.73 | 734.00 | 6139.71 | 608.53 | .172 | 264.27 | 5558.15  | 7425.62  | 97.59  | .10 | .3884 | 11.469 | .0000 | .000  |
| 718.204  | 746.27 | 733.31 | 6139.43 | 614.34 | .174 | 264.87 | 5582.96  | 7523.31  | 97.78  | .10 | .3883 | 11.462 | .0000 | .000  |
| 728.191  | 746.03 | 732.94 | 6139.28 | 617.43 | .175 | 265.19 | 5596.17  | 7575.39  | 52.14  | .05 | .3881 | 11.456 | .0000 | .000  |
| 741.191  | 745.29 | 732.24 | 6139.32 | 616.64 | .175 | 267.20 | 5681.45  | 7673.62  | 98.32  | .10 | .3881 | 11.452 | .0000 | .000  |
| 746.336  | 745.03 | 732.01 | 6139.33 | 616.39 | .175 | 267.89 | 5710.70  | 7767.47  | 33.89  | .03 | .3879 | 11.450 | .0000 | .000  |
| 746.346  | 744.44 | 736.37 | 6145.03 | 484.53 | .137 | 384.43 | 7228.48  | 7707.47  | .00    | .00 | .3887 | 11.481 | .0000 | .000  |
| 761.346  | 744.11 | 734.46 | 6143.21 | 530.34 | .150 | 347.77 | 6735.51  | 7842.75  | 135.43 | .16 | .3887 | 11.481 | .0000 | .000  |
| 776.346  | 743.76 | 732.12 | 6140.91 | 582.89 | .165 | 311.11 | 6240.83  | 7964.43  | 121.82 | .14 | .3883 | 11.462 | .0000 | .000  |
| 791.346  | 743.43 | 729.21 | 6137.96 | 644.10 | .182 | 274.45 | 5744.44  | 8072.48  | 108.16 | .11 | .3879 | 11.441 | .0000 | .000  |
| 794.831  | 743.91 | 729.04 | 6137.18 | 659.28 | .187 | 265.94 | 5628.87  | 8095.61  | 23.16  | .02 | .3874 | 11.418 | .0000 | .000  |
| 809.831  | 743.32 | 728.30 | 6136.99 | 662.90 | .188 | 266.94 | 5671.55  | 8193.74  | 98.23  | .10 | .3873 | 11.414 | .0000 | .000  |
| 824.831  | 742.72 | 727.56 | 6136.80 | 666.52 | .189 | 267.95 | 5714.21  | 8292.22  | 98.57  | .10 | .3872 | 11.409 | .0000 | .000  |
| 839.831  | 742.13 | 726.81 | 6136.61 | 670.13 | .190 | 268.95 | 5756.85  | 8391.03  | 98.91  | .10 | .3871 | 11.403 | .0000 | .000  |
| 854.781  | 741.53 | 726.07 | 6136.42 | 673.73 | .191 | 269.96 | 5799.33  | 8489.85  | 98.91  | .10 | .3869 | 11.398 | .0000 | .000  |
| 859.781  | 741.11 | 726.44 | 6137.33 | 656.28 | .186 | 274.41 | 6021.56  | 8589.97  | 100.21 | .10 | .3868 | 11.393 | .0000 | .000  |
| 864.781  | 740.72 | 726.75 | 6138.14 | 645.43 | .181 | 278.87 | 6241.86  | 8691.72  | 101.85 | .10 | .3869 | 11.402 | .0000 | .000  |
| 899.781  | 740.35 | 727.00 | 6138.86 | 626.00 | .177 | 283.33 | 6460.20  | 8795.13  | 103.51 | .10 | .3869 | 11.409 | .0000 | .000  |
| 914.781  | 739.99 | 727.20 | 6139.50 | 612.84 | .174 | 287.79 | 6676.60  | 8900.20  | 105.16 | .09 | .3870 | 11.415 | .0000 | .000  |
| 929.781  | 739.65 | 727.36 | 6140.08 | 600.81 | .170 | 292.25 | 6891.06  | 9006.92  | 126.81 | .09 | .3870 | 11.421 | .0000 | .000  |
| 944.781  | 739.33 | 727.48 | 6140.59 | 589.80 | .167 | 296.71 | 7103.57  | 9115.29  | 108.47 | .09 | .3870 | 11.425 | .0000 | .000  |
| 959.781  | 738.35 | 726.90 | 6141.03 | 580.24 | .164 | 301.16 | 7314.14  | 9225.33  | 110.12 | .08 | .3870 | 11.430 | .0000 | .000  |
| 974.781  | 737.43 | 726.33 | 6141.43 | 571.47 | .162 | 305.62 | 7522.76  | 9337.00  | 111.75 | .07 | .3869 | 11.433 | .0000 | .000  |
| 989.781  | 736.55 | 725.78 | 6141.79 | 563.39 | .159 | 310.08 | 7729.43  | 9450.28  | 113.36 | .07 | .3868 | 11.436 | .0000 | .000  |
| 1004.781 | 735.73 | 725.25 | 6142.12 | 555.97 | .157 | 314.54 | 7934.16  | 9565.18  | 114.97 | .07 | .3867 | 11.437 | .0000 | .000  |
| 1019.781 | 734.94 | 724.72 | 6142.41 | 549.14 | .155 | 319.00 | 8136.95  | 9681.70  | 116.58 | .06 | .3866 | 11.441 | .0000 | .000  |
| 1034.781 | 734.19 | 724.21 | 6142.68 | 542.85 | .154 | 323.45 | 8337.79  | 9799.82  | 118.19 | .06 | .3865 | 11.442 | .0000 | .000  |
| 1049.791 | 733.90 | 724.02 | 6142.78 | 540.48 | .153 | 325.24 | 8417.71  | 9847.60  | 119.80 | .06 | .3864 | 11.443 | .0000 | .000  |
| 1055.791 | 733.29 | 723.52 | 6142.91 | 537.47 | .152 | 328.18 | 8574.00  | 9967.71  | 120.16 | .05 | .3864 | 11.442 | .0000 | .000  |
| 1070.791 | 732.70 | 723.04 | 6143.03 | 534.76 | .151 | 331.13 | 8728.34  | 10088.87 | 121.22 | .05 | .3863 | 11.441 | .0000 | .000  |
| 1084.791 | 732.19 | 722.61 | 6143.12 | 532.56 | .151 | 333.75 | 8864.55  | 10197.84 | 109.02 | .05 | .3862 | 11.439 | .0000 | .000  |
| 1111.1   | 723.70 | 693.51 | 6108.84 | 956.69 | .271 | .....  | 11992.76 | 10781.43 | 276.58 | .12 | .3862 | 11.456 | ..... | ..... |
| AF11B1   | 723.72 | 723.71 | 6145.05 | -21.59 | .006 | .....  | 6582.15  | 307.12   | 307.53 | .41 | .3864 | 11.474 | ..... | ..... |

| SLOT<br>INTERFACE                       |  | P         | T         | U         | AP        | DWDOT     | AB        | RB     | DELTA<br>TAU,<br>IN. | WSLOT     |
|-----------------------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|--------|----------------------|-----------|
| LOCATION<br>IN.                         |  | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC    | SQ. IN.   | IN/SEC |                      | LB/SEC    |
| FORWARD                                 |  | 1.1676*02 | 7.5957*02 | 7.5639*02 | 6.1507*03 | 9.5649*01 | 1.6460*04 | 0.0000 | 0.0000               | 3.5556*03 |
| AFT                                     |  | 1.1677*02 | 7.5985*02 | 7.5667*02 | 6.1510*03 | 9.5619*01 | 1.6460*04 | 0.0000 | 0.0000               | 3.5556*03 |
| GAS BUILDUP IN SLOT, DW/DI = -4.1444-04 |  |           |           |           |           |           |           |        |                      |           |
| FORWARD                                 |  | 4.2705*02 | 7.5465*02 | 7.4867*02 | 6.1469*03 | 1.5263*02 | 1.6383*04 | 0.0000 | 0.0000               | 5.5886*03 |
| AFT                                     |  | 4.2706*02 | 7.5713*02 | 7.5053*02 | 6.1501*03 | 1.5221*02 | 1.6383*04 | 0.0000 | 0.0000               | 5.5886*03 |
| GAS BUILDUP IN SLOT, DW/DI = -3.9750-04 |  |           |           |           |           |           |           |        |                      |           |
| FORWARD                                 |  | 7.4634*02 | 7.4503*02 | 7.3201*02 | 6.1393*03 | 2.1486*02 | 1.6383*04 | 0.0000 | 0.0000               | 7.7075*03 |
| AFT                                     |  | 7.4635*02 | 7.4947*02 | 7.3637*02 | 6.1450*03 | 2.1378*02 | 1.6383*04 | 0.0000 | 0.0000               | 7.7075*03 |
| GAS BUILDUP IN SLOT, DW/DI = -3.6555-04 |  |           |           |           |           |           |           |        |                      |           |

IGNITION TIME, TIME (S)

33.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 11108331.     | 2497252.2    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 11054677.     | 2665037.3    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 40485.400     | 9101.4801    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMDTI               | .41170687+09  | 92555386.    |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 257.59579     | 257.59579    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .44373358+09  | 99755277.    |
| THRUST COEFFICIENT                                              | CF                   | 1.6269638     | 1.6269638    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 4671.0526     | 10297.908    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 174017.98     | 383643.98    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 21.728221     | 47.902527    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 2008.3835     | 4427.7277    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 273.24939     | 423537.41    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 193.06133     | 11598254.    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 331946.59     | 731816.95    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 640.70686     | 1853.4414    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1598431     | 1.1598431    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.869533     | 28.372463    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1560.7539     | 5120.5836    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .17534442     | .17534442    |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .49854656+09  | 723.08066    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .19512550+11  | 28300.562    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 58.610507     | 90846.469    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .98051020-02  | .38602764    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .33880515     | 13.338785    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 9.4904459     | 579142.54    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VFH                  | 45.613386     | 2783499.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3413.0923     | 6143.5662    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 199.57430     | 309340.79    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 177.47581     | 10830239.    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 112.96671     | 6893651.6    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .47471750+09  | 688.51952    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .17914633+11  | 25982.978    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 15.064584     | 23350.152    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | .96433550-02  | .37965965    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | .96438092-02  | .37967753    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | .33204393     | 12.993856    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | .33052502     | 13.012796    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | 3.0950645     | 188872.42    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 13.954365     | 851547.58    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3409.3292     | 6136.7925    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 8.1286298     | 12599.401    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5348876     | 2379.0806    |
| EXPANSION RATIO                                                 | EPR                  | 7.0028026     | 7.0028026    |
| PRESSURE RATIO                                                  | PEPO                 | .22248256-01  | .22248256-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP      | WDOT    | DWDOT   | DW/DT  | RB     | TAU    | RBTO   | TAUO |
|-----------------------------|--------|--------|---------|--------|------|--------|---------|---------|---------|--------|--------|--------|--------|------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.  |
| FORE                        | 723.08 | 720.77 | 6143.57 | 185.85 | .053 | 264.29 | 5557.28 | 2223.96 | 2225.02 | 1.05   | .3860  | 13.339 | .0000  | .000 |
| 15.000                      | 721.82 | 720.57 | 6143.45 | 193.61 | .055 | 264.55 | 5568.61 | 2320.97 | 97.09   | .08    | .3858  | 13.310 | .0000  | .000 |
| 30.000                      | 721.71 | 720.36 | 6143.33 | 201.36 | .057 | 264.82 | 5579.93 | 2418.07 | 97.18   | .08    | .3858  | 13.306 | .0000  | .000 |
| 45.000                      | 721.60 | 720.14 | 6143.21 | 209.09 | .059 | 265.08 | 5591.26 | 2515.26 | 97.27   | .08    | .3857  | 13.302 | .0000  | .000 |
| 60.000                      | 721.48 | 719.91 | 6143.08 | 216.80 | .061 | 265.35 | 5602.59 | 2612.53 | 97.36   | .08    | .3857  | 13.298 | .0000  | .000 |
| 75.000                      | 721.36 | 719.67 | 6142.94 | 224.49 | .064 | 265.61 | 5613.92 | 2709.89 | 97.44   | .08    | .3856  | 13.294 | .0000  | .000 |
| 90.000                      | 721.23 | 719.43 | 6142.81 | 232.17 | .066 | 265.88 | 5625.26 | 2807.34 | 97.53   | .08    | .3856  | 13.290 | .0000  | .000 |
| 105.000                     | 721.10 | 719.18 | 6142.66 | 239.83 | .068 | 266.14 | 5636.59 | 2904.88 | 97.61   | .08    | .3855  | 13.285 | .0000  | .000 |
| 116.761                     | 721.00 | 718.98 | 6142.55 | 245.83 | .070 | 266.35 | 5645.48 | 2981.41 | 76.60   | .06    | .3855  | 13.281 | .0000  | .000 |
| 116.771                     | 720.99 | 719.14 | 6142.75 | 235.08 | .067 | 269.01 | 5902.39 | 2981.41 | .00     | .00    | .3855  | 13.282 | .0000  | .000 |
| 131.771                     | 720.98 | 718.90 | 6142.47 | 249.74 | .071 | 267.09 | 5740.74 | 3079.68 | 98.34   | .08    | .3855  | 13.282 | .0000  | .000 |
| 143.919                     | 720.98 | 718.68 | 6142.22 | 262.20 | .074 | 265.54 | 5669.68 | 3158.74 | 79.13   | .06    | .3854  | 13.276 | .0000  | .000 |
| 156.919                     | 720.82 | 718.40 | 6142.08 | 268.91 | .076 | 266.47 | 5640.59 | 3256.23 | 97.58   | .08    | .3854  | 13.271 | .0000  | .000 |
| 173.919                     | 720.64 | 718.11 | 6141.94 | 275.59 | .078 | 267.41 | 5671.46 | 3354.06 | 97.91   | .08    | .3853  | 13.266 | .0000  | .000 |
| 186.919                     | 720.47 | 717.81 | 6141.79 | 282.23 | .080 | 268.35 | 5702.31 | 3452.22 | 98.24   | .08    | .3853  | 13.262 | .0000  | .000 |
| 203.919                     | 720.29 | 717.50 | 6141.64 | 288.84 | .082 | 269.28 | 5733.12 | 3550.70 | 98.57   | .08    | .3852  | 13.257 | .0000  | .000 |
| 218.919                     | 720.10 | 717.19 | 6141.49 | 295.41 | .084 | 270.22 | 5763.90 | 3649.52 | 98.90   | .08    | .3852  | 13.252 | .0000  | .000 |
| 233.919                     | 719.91 | 716.87 | 6141.34 | 301.96 | .085 | 271.16 | 5794.64 | 3748.66 | 99.23   | .08    | .3851  | 13.247 | .0000  | .000 |
| 248.919                     | 719.72 | 716.55 | 6141.18 | 308.47 | .087 | 272.09 | 5825.36 | 3848.13 | 99.55   | .08    | .3851  | 13.242 | .0000  | .000 |
| 263.919                     | 719.52 | 716.22 | 6141.02 | 314.95 | .089 | 273.03 | 5856.04 | 3947.93 | 99.88   | .08    | .3850  | 13.237 | .0000  | .000 |
| 278.919                     | 719.32 | 715.88 | 6140.86 | 321.40 | .091 | 273.97 | 5886.69 | 4048.05 | 100.21  | .08    | .3849  | 13.232 | .0000  | .000 |
| 293.919                     | 719.11 | 715.53 | 6140.70 | 327.82 | .093 | 274.90 | 5917.30 | 4148.50 | 100.53  | .08    | .3849  | 13.227 | .0000  | .000 |
| 308.919                     | 718.90 | 715.18 | 6140.53 | 334.21 | .095 | 275.84 | 5947.89 | 4249.28 | 100.86  | .08    | .3848  | 13.222 | .0000  | .000 |
| 323.919                     | 718.69 | 714.83 | 6140.36 | 340.57 | .096 | 276.78 | 5978.44 | 4350.38 | 101.19  | .08    | .3847  | 13.217 | .0000  | .000 |
| 338.919                     | 718.47 | 714.46 | 6140.19 | 346.91 | .098 | 277.71 | 6008.96 | 4451.81 | 101.51  | .08    | .3847  | 13.212 | .0000  | .000 |
| 353.919                     | 718.24 | 714.09 | 6140.02 | 353.22 | .100 | 278.65 | 6039.45 | 4553.56 | 101.84  | .08    | .3846  | 13.207 | .0000  | .000 |
| 368.919                     | 718.02 | 713.72 | 6139.84 | 359.50 | .102 | 279.59 | 6069.90 | 4655.64 | 102.16  | .08    | .3845  | 13.202 | .0000  | .000 |
| 383.919                     | 717.78 | 713.34 | 6139.67 | 365.76 | .104 | 280.52 | 6100.32 | 4758.04 | 102.49  | .08    | .3845  | 13.196 | .0000  | .000 |
| 398.919                     | 717.55 | 712.95 | 6139.48 | 372.00 | .105 | 281.46 | 6130.71 | 4860.77 | 102.81  | .08    | .3844  | 13.191 | .0000  | .000 |
| 413.040                     | 717.48 | 712.84 | 6139.43 | 373.71 | .106 | 281.72 | 6139.07 | 4889.10 | 28.35   | .02    | .3843  | 13.186 | .0000  | .000 |
| 427.051                     | 717.24 | 712.45 | 6139.25 | 380.05 | .108 | 279.87 | 6166.68 | 4991.72 | 102.71  | .08    | .3843  | 13.184 | .0000  | .000 |
|                             | 717.10 | 712.21 | 6139.13 | 383.78 | .109 | 278.76 | 6183.50 | 5052.99 | 61.31   | .05    | .3842  | 13.180 | .0000  | .000 |
| 427.061                     | 716.78 | 714.07 | 6141.72 | 285.35 | .081 | 418.36 | 8298.46 | 5052.99 | .00     | .00    | .3845  | 13.200 | .0000  | .000 |
| 442.061                     | 716.54 | 712.73 | 6140.41 | 338.90 | .096 | 354.50 | 7194.52 | 5194.27 | 141.42  | .14    | .3845  | 13.200 | .0000  | .000 |
| 457.061                     | 716.21 | 710.55 | 6138.20 | 413.44 | .117 | 290.63 | 6047.58 | 5312.17 | 118.02  | .11    | .3843  | 13.175 | .0000  | .000 |
| 463.204                     | 716.08 | 709.28 | 6136.84 | 453.48 | .128 | 264.48 | 5565.47 | 5353.68 | 41.55   | .04    | .3839  | 13.139 | .0000  | .000 |
| 478.204                     | 715.78 | 708.78 | 6136.61 | 459.85 | .130 | 265.07 | 5591.38 | 5450.30 | 96.70   | .09    | .3836  | 13.121 | .0000  | .000 |
| 493.204                     | 715.46 | 708.27 | 6136.38 | 466.20 | .132 | 265.67 | 5616.68 | 5547.09 | 96.88   | .09    | .3835  | 13.114 | .0000  | .000 |
| 508.204                     | 715.14 | 707.76 | 6136.15 | 472.52 | .134 | 266.26 | 5642.28 | 5644.07 | 97.07   | .09    | .3834  | 13.108 | .0000  | .000 |
| 523.204                     | 714.82 | 707.25 | 6135.91 | 478.81 | .136 | 266.86 | 5667.87 | 5741.25 | 97.26   | .09    | .3833  | 13.101 | .0000  | .000 |
| 538.204                     | 714.49 | 706.73 | 6135.67 | 485.09 | .137 | 267.45 | 5693.46 | 5838.61 | 97.46   | .09    | .3832  | 13.094 | .0000  | .000 |
| 553.204                     | 714.16 | 706.20 | 6135.43 | 491.33 | .139 | 268.05 | 5719.05 | 5936.17 | 97.65   | .09    | .3831  | 13.087 | .0000  | .000 |
| 568.204                     | 713.83 | 705.66 | 6135.19 | 497.56 | .141 | 268.64 | 5744.63 | 6033.92 | 97.84   | .09    | .3830  | 13.080 | .0000  | .000 |
| 583.204                     | 713.49 | 705.13 | 6134.95 | 503.76 | .143 | 269.23 | 5770.20 | 6131.87 | 98.03   | .09    | .3829  | 13.073 | .0000  | .000 |
| 598.204                     | 713.14 | 704.58 | 6134.70 | 509.93 | .144 | 269.83 | 5795.77 | 6230.00 | 98.22   | .09    | .3828  | 13.066 | .0000  | .000 |
| 613.204                     | 712.79 | 704.03 | 6134.45 | 516.09 | .146 | 270.42 | 5821.33 | 6328.32 | 98.41   | .09    | .3827  | 13.059 | .0000  | .000 |

|          |        |        |         |        |      |        |          |          |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|-----|-------|--------|-------|
| 628.204  | 712.44 | 703.47 | 6134.20 | 522.22 | .148 | 271.02 | 5846.89  | 6426.83  | 98.60  | .09 | .3826 | 13.052 | .0000 |
| 643.204  | 712.09 | 702.91 | 6133.95 | 528.34 | .150 | 271.61 | 5872.44  | 6525.53  | 98.79  | .09 | .3825 | 13.044 | .0000 |
| 658.204  | 711.73 | 702.34 | 6133.70 | 534.43 | .151 | 272.21 | 5897.99  | 6624.43  | 98.98  | .09 | .3824 | 13.037 | .0000 |
| 673.204  | 711.36 | 701.77 | 6133.44 | 540.50 | .153 | 272.80 | 5923.54  | 6723.50  | 99.17  | .09 | .3823 | 13.030 | .0000 |
| 688.204  | 710.99 | 701.19 | 6133.15 | 546.55 | .155 | 273.40 | 5949.08  | 6822.77  | 99.36  | .09 | .3822 | 13.023 | .0000 |
| 703.204  | 710.62 | 700.61 | 6132.92 | 552.59 | .156 | 273.99 | 5974.61  | 6922.23  | 99.54  | .09 | .3821 | 13.016 | .0000 |
| 718.204  | 710.24 | 700.02 | 6132.66 | 558.60 | .158 | 274.58 | 6000.14  | 7021.87  | 99.73  | .09 | .3820 | 13.009 | .0000 |
| 726.191  | 710.04 | 699.70 | 6132.52 | 561.80 | .159 | 274.90 | 6013.73  | 7075.00  | 53.18  | .05 | .3819 | 13.002 | .0000 |
| 741.191  | 709.44 | 699.11 | 6132.51 | 561.99 | .159 | 276.91 | 6101.97  | 7175.18  | 100.27 | .09 | .3818 | 12.998 | .0000 |
| 746.336  | 709.24 | 698.90 | 6132.51 | 562.08 | .159 | 277.60 | 6132.21  | 7209.70  | 34.55  | .03 | .3817 | 12.996 | .0000 |
| 746.336  | 708.74 | 702.44 | 6137.36 | 438.47 | .124 | 389.71 | 7827.52  | 7209.70  | .00    | .00 | .3823 | 13.029 | .0000 |
| 761.346  | 708.46 | 700.88 | 6135.82 | 481.32 | .136 | 354.43 | 7270.75  | 7344.95  | 135.39 | .14 | .3823 | 13.029 | .0000 |
| 776.346  | 708.16 | 698.95 | 6133.85 | 530.68 | .150 | 319.14 | 6728.06  | 7467.33  | 122.50 | .12 | .3820 | 13.009 | .0000 |
| 791.346  | 707.83 | 696.54 | 6131.31 | 588.44 | .167 | 283.86 | 6175.45  | 7576.80  | 109.58 | .10 | .3817 | 12.987 | .0000 |
| 794.831  | 708.25 | 696.39 | 6133.64 | 602.89 | .171 | 275.66 | 6046.79  | 7600.30  | 23.63  | .02 | .3812 | 12.962 | .0000 |
| 809.831  | 707.76 | 695.75 | 6130.44 | 606.94 | .172 | 276.66 | 6090.94  | 7700.48  | 100.19 | .09 | .3812 | 12.957 | .0000 |
| 824.831  | 707.27 | 695.11 | 6130.25 | 610.98 | .173 | 277.65 | 6135.04  | 7800.92  | 100.53 | .09 | .3811 | 12.951 | .0000 |
| 839.831  | 706.78 | 694.46 | 6130.06 | 615.02 | .174 | 278.65 | 6179.09  | 7901.69  | 100.86 | .09 | .3809 | 12.945 | .0000 |
| 854.781  | 706.28 | 693.82 | 6129.86 | 619.02 | .175 | 279.65 | 6222.95  | 8002.45  | 100.85 | .09 | .3808 | 12.940 | .0000 |
| 869.781  | 705.93 | 694.06 | 6133.58 | 604.13 | .171 | 284.10 | 6456.19  | 8104.50  | 102.14 | .09 | .3807 | 12.934 | .0000 |
| 884.781  | 705.59 | 694.24 | 6131.21 | 590.66 | .167 | 288.56 | 6686.74  | 8208.16  | 103.75 | .09 | .3807 | 12.943 | .0000 |
| 899.781  | 705.27 | 694.39 | 6131.77 | 578.45 | .164 | 293.01 | 6914.62  | 8313.45  | 105.37 | .09 | .3808 | 12.950 | .0000 |
| 914.781  | 704.29 | 693.82 | 6132.25 | 567.93 | .161 | 297.47 | 7139.81  | 8420.36  | 107.00 | .08 | .3808 | 12.957 | .0000 |
| 929.781  | 703.38 | 693.27 | 6132.67 | 558.34 | .158 | 301.93 | 7362.32  | 8528.89  | 108.60 | .08 | .3807 | 12.962 | .0000 |
| 944.781  | 702.52 | 692.73 | 6133.05 | 549.61 | .156 | 306.38 | 7582.15  | 8639.00  | 110.18 | .07 | .3806 | 12.967 | .0000 |
| 959.781  | 701.72 | 692.22 | 6133.39 | 541.65 | .153 | 310.84 | 7799.30  | 8750.69  | 111.77 | .07 | .3805 | 12.971 | .0000 |
| 974.781  | 700.95 | 691.71 | 6133.70 | 534.40 | .151 | 315.30 | 8013.77  | 8863.98  | 113.35 | .07 | .3804 | 12.974 | .0000 |
| 989.781  | 700.23 | 691.22 | 6133.97 | 527.78 | .149 | 319.75 | 8225.56  | 8978.85  | 114.94 | .07 | .3803 | 12.977 | .0000 |
| 1004.781 | 699.54 | 690.75 | 6134.22 | 521.75 | .140 | 324.21 | 8434.67  | 9095.30  | 116.52 | .06 | .3802 | 12.979 | .0000 |
| 1019.781 | 698.88 | 690.28 | 6134.45 | 516.26 | .146 | 328.67 | 8641.10  | 9213.35  | 118.10 | .06 | .3801 | 12.981 | .0000 |
| 1034.781 | 698.26 | 689.83 | 6134.65 | 511.27 | .145 | 333.12 | 8844.84  | 9332.98  | 119.69 | .05 | .3800 | 12.982 | .0000 |
| 1049.791 | 698.01 | 689.65 | 6134.72 | 509.40 | .144 | 334.91 | 8925.72  | 9381.36  | 48.40  | .02 | .3799 | 12.982 | .0000 |
| 1064.791 | 697.49 | 689.21 | 6134.81 | 507.19 | .144 | 337.85 | 9086.91  | 9502.94  | 121.63 | .05 | .3799 | 12.981 | .0000 |
| 1079.791 | 696.99 | 688.77 | 6134.89 | 505.23 | .143 | 340.80 | 9245.64  | 9625.56  | 122.67 | .05 | .3798 | 12.979 | .0000 |
| 1094.171 | 696.58 | 688.39 | 6134.95 | 503.71 | .143 | 343.42 | 9385.18  | 9735.81  | 110.30 | .04 | .3797 | 12.977 | .0000 |
| AF1(A)   | 688.53 | 659.65 | 6100.65 | 958.89 | .272 | .....  | 12599.40 | 10297.91 | 278.52 | .10 | .3797 | 12.994 | ..... |
| AF1(B)   | 688.55 | 688.54 | 6136.79 | -19.18 | .005 | .....  | 7188.79  | 283.68   | 283.98 | .31 | .3797 | 13.013 | ..... |

| SLOT                                    |           | P         | T         | U         | AP        | QMDOT     | AB      | RB     | DELTA  | WSLOT     |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|--------|--------|-----------|
| INTERFACE                               | LOCATION  | PO        | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | SQ. IN. | IN/SEC | TAU    | IN.       |
| IN.                                     |           |           |           |           |           |           |         |        |        | LB/SEC    |
| FORWARD                                 | 1.1676+02 | 7.2100+02 | 7.1898+02 | 6.1425+03 | 8.4313+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000 | 2.9814+03 |
| AFT                                     | 1.1677+02 | 7.2116+02 | 7.1914+02 | 6.1428+03 | 8.4296+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000 | 2.9814+03 |
| GAS BUILDUP IN SLOT, DM/DI = -3.7845-04 |           |           |           |           |           |           |         |        |        |           |
| FORWARD                                 | 4.2705+02 | 7.1710+02 | 7.1221+02 | 6.1391+03 | 1.4485+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 5.0530+03 |
| AFT                                     | 4.2708+02 | 7.1897+02 | 7.1407+02 | 6.1417+03 | 1.4454+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 5.0530+03 |
| GAS BUILDUP IN SLOT, DM/DI = -3.6423-04 |           |           |           |           |           |           |         |        |        |           |
| FORWARD                                 | 7.4634+02 | 7.0924+02 | 6.9890+02 | 6.1325+03 | 2.1039+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 7.2097+03 |
| AFT                                     | 7.4635+02 | 7.1282+02 | 7.0244+02 | 6.1374+03 | 2.0950+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000 | 7.2097+03 |
| GAS BUILDUP IN SLOT, DM/DI = -3.3909-04 |           |           |           |           |           |           |         |        |        |           |



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| PARAMETER DESCRIPTION (UNITS)               | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|---------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                    |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)              | FTDEL                | 10640049.     | 2391978.1    |
| TOTAL VACUUM THRUST (N,LBF)                 | FTVAC                | 11310526.     | 2542707.4    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)       | FI                   | 35981.755     | 8089.0204    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)         | SRMOTI               | .45519967+09  | .10233296+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)         | TISP                 | 257.45161     | 257.45161    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)            | SRMVTI               | .49006030+09  | .11016994+09 |
| THRUST COEFFICIENT                          | CF                   | 1.6262469     | 1.6262469    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/ST) | WDOT                 | 4460.5701     | 9833.8739    |
| FLOWRATE INTEGRAL (KG,LBM)                  | SWDOTN               | 192240.00     | 423904.84    |
| INERT MASS FLOWRATE (KG/S,LBM/ST)           | MIF                  | 19.311147     | 42.573792    |
| INERT MASS REMAINING (KG,LBM)               | MIR                  | 1920.8097     | 4252.4738    |
| TOTAL BURN AREA (M**2,IN**2)                | ABTOT                | 265.48695     | 411505.60    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)        | VF                   | 179.58378     | 10958875.    |
| PROPELLANT MASS REMAINING (KG,LBM)          | WF                   | 313674.00     | 691532.80    |
| TOTAL GAS MASS (KG,LBM)                     | WGTOT                | 849.02141     | 1871.7718    |
| RATIO OF SPECIFIC HEATS                     | GAMA                 | 1.1598059     | 1.1598059    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)  | AMW                  | 12.862617     | 28.357217    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)  | CSTAR                | 1560.3027     | 5119.1033    |
| MAXIMUM CHAMBER MACH NUMBER                 | AMPN                 | .16176340     | .16176340    |
| <b>HEAD END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)           | PH                   | .47290039+09  | 685.89564    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)    | SPHDT                | .21455126+11  | 31118.030    |
| BURN AREA (M**2,IN**2)                      | AHH                  | 44.680969     | 69255.641    |
| BURN RATE (M/S,IN/S)                        | RBZ(1)               | .96305562-02  | .37915576    |
| DISTANCE BURNED (M,IN)                      | TAUZ(1)              | .37785078     | 14.876015    |
| PROPELLANT VOLUME (M**3,IN**3)              | VFH                  | 7.9768283     | 456264.06    |
| GAS VOLUME (M**3,IN**3)                     | VPH                  | 47.627004     | 2906378.1    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)        | PRNT(1,3)            | 3408.5861     | 6135.4550    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>      |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)               | ABCYL                | 206.15658     | 319543.34    |
| SEGMENT FACE BURN AREA (M**2,IN**2)         | AUSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)              | VFCYL                | 169.58349     | 10348619.    |
| GAS VOLUME (M**3,IN**3)                     | VP                   | 120.85932     | 7375288.4    |
| <b>AFT END PARAMETERS:</b>                  |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)   | PON                  | .45203717+09  | 655.62449    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)    | SPONDT               | .19767971+11  | 28671.019    |
| BURN AREA (M**2,IN**2)                      | AAN                  | 14.649408     | 22706.627    |
| BURN RATE, REGION A (M/S,IN/SEC)            | RBZ(NT+1,1)          | .94812844-02  | .37327892    |
| BURN RATE, REGION B (M/S,IN/SEC)            | RBZ(NT+2,1)          | .94799740-02  | .37322733    |
| DISTANCE BURNED, REGION A (M,IN)            | TAUZ(NT+1,1)         | .36845548     | 14.506121    |
| DISTANCE BURNED, REGION B (M,IN)            | TAUZ(NT+2,1)         | .36893649     | 14.525059    |
| PROPELLANT VOLUME (M**3,IN**3)              | VFN                  | 2.5234718     | 153991.70    |
| GAS VOLUME (M**3,IN**3)                     | VPN                  | 14.525957     | 886428.30    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)      | PRNT(NT+2,3)         | 3405.0366     | 6129.0659    |
| PORT AREA, NOZ ENT (M**2,IN**2)             | AZA                  | 8.5195408     | 13205.315    |
| <b>NOZZLE PARAMETERS:</b>                   |                      |               |              |
| THROAT AREA (M**2,IN**2)                    | AT                   | 1.5385874     | 2384.8153    |
| EXPANSION RATIO                             | EPR                  | 6.9059632     | 6.9859632    |
| PRESSURE RATIO                              | PEPO                 | .22320672-01  | .22320672-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>            |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT           | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS               | ANLOPS               | 2.0000000     | 2.0000000    |

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## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP      | WDOT    | DWDOT   | DW/DT  | RB     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|---------|---------|---------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN. | LB/SEC  | LB/SEC  | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FCRE                        | 685.90 | 684.71 | 6135.46 | 136.36 | .039 | 273.92 | 5970.72 | 1666.76 | 1665.60 | -1.16  | .3790  | 14.876 | .0000  | .000  |
| 15.000                      | 685.23 | 684.57 | 6135.37 | 144.19 | .041 | 274.19 | 5982.41 | 1765.53 | 98.84   | .07    | .3789  | 14.847 | .0000  | .000  |
| 30.000                      | 685.16 | 684.42 | 6135.28 | 151.99 | .043 | 274.45 | 5994.11 | 1864.39 | 98.93   | .07    | .3789  | 14.842 | .0000  | .000  |
| 45.000                      | 685.08 | 684.27 | 6135.18 | 159.78 | .045 | 274.72 | 6005.81 | 1963.34 | 99.02   | .07    | .3789  | 14.838 | .0000  | .000  |
| 60.000                      | 685.00 | 684.10 | 6135.08 | 167.56 | .047 | 274.99 | 6017.51 | 2062.38 | 99.10   | .07    | .3788  | 14.834 | .0000  | .000  |
| 75.000                      | 684.91 | 683.93 | 6134.98 | 175.31 | .050 | 275.25 | 6029.21 | 2161.50 | 99.19   | .07    | .3788  | 14.830 | .0000  | .000  |
| 90.000                      | 684.82 | 683.75 | 6134.87 | 183.05 | .052 | 275.52 | 6040.91 | 2260.72 | 99.28   | .07    | .3788  | 14.825 | .0000  | .000  |
| 105.000                     | 684.72 | 683.56 | 6134.76 | 190.77 | .054 | 275.79 | 6052.61 | 2360.02 | 99.37   | .07    | .3787  | 14.821 | .0000  | .000  |
| 116.761                     | 684.64 | 683.41 | 6134.66 | 198.81 | .056 | 276.00 | 6061.70 | 2437.94 | 77.97   | .05    | .3787  | 14.816 | .0000  | .000  |
| 116.771                     | 684.64 | 683.51 | 6134.79 | 188.70 | .053 | 276.97 | 6321.37 | 2437.94 | .00     | .00    | .3787  | 14.818 | .0000  | .000  |
| 131.771                     | 684.61 | 683.32 | 6134.59 | 201.68 | .057 | 275.98 | 6157.52 | 2537.52 | 99.65   | .06    | .3787  | 14.818 | .0000  | .000  |
| 143.919                     | 684.59 | 683.16 | 6134.41 | 212.71 | .060 | 275.17 | 6024.68 | 2617.90 | 80.43   | .05    | .3787  | 14.811 | .0000  | .000  |
| 158.919                     | 684.47 | 682.94 | 6134.29 | 219.66 | .062 | 276.10 | 6057.95 | 2717.16 | 99.33   | .07    | .3786  | 14.806 | .0000  | .000  |
| 173.919                     | 684.34 | 682.71 | 6134.17 | 226.57 | .064 | 277.04 | 6089.38 | 2816.75 | 99.66   | .07    | .3786  | 14.801 | .0000  | .000  |
| 188.919                     | 684.21 | 682.48 | 6134.04 | 233.44 | .066 | 277.98 | 6121.67 | 2916.67 | 99.98   | .07    | .3785  | 14.796 | .0000  | .000  |
| 203.919                     | 684.07 | 682.24 | 6133.92 | 240.28 | .068 | 278.91 | 6153.91 | 3016.91 | 100.31  | .07    | .3785  | 14.791 | .0000  | .000  |
| 218.919                     | 683.93 | 682.00 | 6133.79 | 247.08 | .070 | 279.85 | 6186.11 | 3117.48 | 100.63  | .07    | .3784  | 14.786 | .0000  | .000  |
| 233.919                     | 683.79 | 681.74 | 6133.65 | 253.85 | .072 | 280.78 | 6218.26 | 3218.37 | 100.96  | .07    | .3784  | 14.781 | .0000  | .000  |
| 248.919                     | 683.64 | 681.44 | 6133.52 | 260.58 | .074 | 281.72 | 6250.36 | 3319.58 | 101.28  | .07    | .3783  | 14.776 | .0000  | .000  |
| 263.919                     | 683.49 | 681.22 | 6133.38 | 267.28 | .076 | 282.65 | 6282.42 | 3421.12 | 101.61  | .07    | .3783  | 14.771 | .0000  | .000  |
| 278.919                     | 683.33 | 680.95 | 6133.24 | 273.94 | .078 | 283.59 | 6314.44 | 3522.98 | 101.93  | .07    | .3782  | 14.765 | .0000  | .000  |
| 293.919                     | 683.17 | 680.67 | 6133.09 | 280.57 | .079 | 284.53 | 6346.41 | 3625.16 | 102.25  | .07    | .3782  | 14.760 | .0000  | .000  |
| 308.919                     | 683.00 | 680.39 | 6132.95 | 287.18 | .081 | 285.46 | 6378.34 | 3727.67 | 102.58  | .07    | .3781  | 14.755 | .0000  | .000  |
| 323.919                     | 682.83 | 680.10 | 6132.80 | 293.75 | .083 | 286.40 | 6410.22 | 3830.50 | 102.90  | .07    | .3781  | 14.750 | .0000  | .000  |
| 338.919                     | 682.66 | 679.80 | 6132.64 | 300.29 | .085 | 287.33 | 6442.05 | 3933.65 | 103.22  | .07    | .3780  | 14.744 | .0000  | .000  |
| 353.919                     | 682.48 | 679.50 | 6132.49 | 306.81 | .087 | 288.27 | 6473.84 | 4037.12 | 103.54  | .07    | .3780  | 14.739 | .0000  | .000  |
| 368.919                     | 682.30 | 679.19 | 6132.33 | 313.29 | .089 | 289.20 | 6505.59 | 4140.91 | 103.86  | .07    | .3779  | 14.733 | .0000  | .000  |
| 383.919                     | 682.11 | 678.88 | 6132.17 | 319.75 | .091 | 290.14 | 6537.29 | 4245.02 | 104.18  | .07    | .3779  | 14.728 | .0000  | .000  |
| 398.919                     | 681.92 | 678.56 | 6132.01 | 326.18 | .092 | 291.08 | 6568.95 | 4349.45 | 104.50  | .07    | .3778  | 14.722 | .0000  | .000  |
| 403.048                     | 681.87 | 678.47 | 6131.96 | 327.95 | .093 | 291.33 | 6577.65 | 4378.25 | 28.82   | .02    | .3777  | 14.717 | .0000  | .000  |
| 418.048                     | 681.68 | 678.14 | 6131.79 | 334.66 | .095 | 289.48 | 6602.37 | 4482.58 | 104.40  | .07    | .3777  | 14.715 | .0000  | .000  |
| 427.051                     | 681.56 | 677.94 | 6131.68 | 338.63 | .096 | 288.97 | 6617.45 | 4544.88 | 62.33   | .04    | .3776  | 14.711 | .0000  | .000  |
| 427.061                     | 681.32 | 679.34 | 6133.73 | 250.16 | .071 | 423.12 | 8942.34 | 4544.88 | .00     | .00    | .3779  | 14.731 | .0000  | .000  |
| 442.061                     | 681.13 | 678.32 | 6132.69 | 298.17 | .084 | 361.27 | 7745.56 | 4685.82 | 141.05  | .11    | .3779  | 14.731 | .0000  | .000  |
| 457.061                     | 680.86 | 676.65 | 6130.95 | 365.05 | .103 | 299.41 | 6500.81 | 4804.50 | 118.78  | .09    | .3777  | 14.705 | .0000  | .000  |
| 463.204                     | 680.75 | 675.68 | 6129.87 | 401.31 | .114 | 274.68 | 5977.19 | 4846.67 | 42.19   | .03    | .3774  | 14.668 | .0000  | .000  |
| 478.204                     | 680.50 | 675.27 | 6129.66 | 407.59 | .115 | 274.67 | 6003.67 | 4945.11 | 98.52   | .07    | .3772  | 14.649 | .0000  | .000  |
| 493.204                     | 680.25 | 674.85 | 6129.45 | 414.14 | .117 | 275.26 | 6030.12 | 5043.73 | 98.69   | .07    | .3771  | 14.642 | .0000  | .000  |
| 508.204                     | 679.99 | 674.42 | 6129.23 | 420.66 | .119 | 275.85 | 6056.56 | 5142.54 | 98.88   | .07    | .3770  | 14.635 | .0000  | .000  |
| 523.204                     | 679.72 | 673.98 | 6129.02 | 427.16 | .121 | 276.45 | 6082.99 | 5241.54 | 99.08   | .07    | .3769  | 14.628 | .0000  | .000  |
| 538.204                     | 679.46 | 673.54 | 6128.80 | 433.63 | .123 | 277.04 | 6109.40 | 5340.73 | 99.27   | .07    | .3768  | 14.620 | .0000  | .000  |
| 553.204                     | 679.18 | 673.10 | 6128.58 | 440.07 | .125 | 277.63 | 6135.80 | 5440.11 | 99.46   | .07    | .3767  | 14.613 | .0000  | .000  |
| 568.204                     | 678.91 | 672.64 | 6128.35 | 446.49 | .126 | 278.22 | 6162.19 | 5539.68 | 99.64   | .07    | .3767  | 14.606 | .0000  | .000  |
| 583.204                     | 678.63 | 672.19 | 6128.13 | 452.89 | .128 | 278.81 | 6188.56 | 5639.44 | 99.83   | .07    | .3766  | 14.598 | .0000  | .000  |
| 598.204                     | 678.34 | 671.72 | 6127.90 | 459.26 | .130 | 279.41 | 6214.91 | 5739.38 | 100.02  | .07    | .3765  | 14.591 | .0000  | .000  |
| 613.204                     | 678.05 | 671.25 | 6127.67 | 465.61 | .132 | 280.00 | 6241.25 | 5839.52 | 100.21  | .07    | .3764  | 14.583 | .0000  | .000  |

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|-------------|--------|--------|---------|--------|------|--------|---------|---------|--------|-----|-------|--------|-------|
| 628.204     | 677.76 | 670.70 | 6127.44 | 471.93 | .134 | 280.59 | 4267.58 | 5939.84 | 100.40 | .07 | .3763 | 14.576 | .0000 |
| 643.204     | 677.47 | 670.30 | 6127.20 | 478.24 | .135 | 281.16 | 4243.89 | 6040.35 | 100.59 | .07 | .3762 | 14.568 | .0000 |
| 658.204     | 677.17 | 669.81 | 6126.96 | 484.52 | .137 | 281.77 | 6320.18 | 6141.05 | 100.77 | .07 | .3761 | 14.561 | .0000 |
| 673.204     | 676.86 | 669.32 | 6126.72 | 490.78 | .139 | 282.37 | 6346.46 | 6241.94 | 100.96 | .07 | .3760 | 14.553 | .0000 |
| 688.204     | 676.55 | 668.83 | 6126.48 | 497.02 | .141 | 282.96 | 6372.73 | 6343.01 | 101.14 | .07 | .3759 | 14.546 | .0000 |
| 703.204     | 676.24 | 668.33 | 6126.24 | 503.24 | .143 | 283.55 | 6398.99 | 6444.26 | 101.33 | .07 | .3758 | 14.538 | .0000 |
| 718.204     | 675.93 | 667.84 | 6125.99 | 509.44 | .144 | 284.14 | 6425.22 | 6545.71 | 101.52 | .07 | .3757 | 14.531 | .0000 |
| 726.191     | 675.76 | 667.52 | 6125.86 | 512.74 | .145 | 284.46 | 6439.19 | 6599.79 | 54.13  | .04 | .3756 | 14.523 | .0000 |
| 741.191     | 675.27 | 667.03 | 6125.82 | 513.78 | .146 | 284.46 | 6530.36 | 6701.76 | 102.05 | .07 | .3756 | 14.519 | .0000 |
| 746.336     | 675.10 | 666.85 | 6125.80 | 514.15 | .146 | 287.15 | 6561.58 | 6736.90 | 35.16  | .03 | .3755 | 14.516 | .0000 |
| 746.346     | 674.69 | 669.71 | 6129.93 | 398.96 | .113 | 396.18 | 8425.78 | 6736.90 | .00    | .00 | .3760 | 14.552 | .0000 |
| 761.346     | 674.45 | 668.43 | 6128.61 | 439.04 | .124 | 361.84 | 7823.70 | 6872.42 | 135.63 | .11 | .3760 | 14.552 | .0000 |
| 776.346     | 674.19 | 666.84 | 6126.93 | 485.31 | .137 | 327.51 | 7219.91 | 6995.63 | 123.31 | .10 | .3757 | 14.531 | .0000 |
| 791.346     | 673.90 | 664.84 | 6124.75 | 539.62 | .153 | 293.18 | 6613.80 | 7106.48 | 110.94 | .09 | .3754 | 14.507 | .0000 |
| 794.831     | 674.24 | 664.71 | 6124.16 | 553.29 | .157 | 285.20 | 6472.68 | 7130.46 | 24.00  | .02 | .3750 | 14.480 | .0000 |
| 809.831     | 673.83 | 664.15 | 6123.97 | 557.72 | .158 | 286.20 | 6518.27 | 7232.36 | 101.98 | .07 | .3750 | 14.476 | .0000 |
| 824.831     | 673.42 | 663.59 | 6123.77 | 562.14 | .159 | 287.19 | 6563.78 | 7334.60 | 102.31 | .07 | .3749 | 14.469 | .0000 |
| 839.831     | 673.00 | 663.03 | 6123.58 | 566.54 | .161 | 288.19 | 6609.22 | 7437.16 | 102.64 | .07 | .3748 | 14.463 | .0000 |
| 854.781     | 672.59 | 662.47 | 6123.38 | 570.92 | .162 | 289.18 | 6654.44 | 7539.70 | 102.62 | .07 | .3747 | 14.457 | .0000 |
| 869.781     | 672.28 | 662.01 | 6123.94 | 558.24 | .158 | 293.63 | 6898.52 | 7643.53 | 103.90 | .07 | .3746 | 14.450 | .0000 |
| 884.781     | 671.36 | 662.07 | 6124.42 | 547.35 | .155 | 298.09 | 7139.20 | 7748.94 | 105.48 | .07 | .3746 | 14.460 | .0000 |
| 899.781     | 670.49 | 661.54 | 6124.84 | 537.52 | .152 | 302.54 | 7376.45 | 7855.93 | 107.05 | .06 | .3745 | 14.467 | .0000 |
| 914.781     | 669.68 | 661.04 | 6125.21 | 520.64 | .150 | 307.00 | 7610.29 | 7964.48 | 108.61 | .06 | .3744 | 14.474 | .0000 |
| 929.781     | 668.93 | 660.55 | 6125.54 | 520.61 | .147 | 311.45 | 7840.71 | 8074.59 | 110.17 | .06 | .3743 | 14.479 | .0000 |
| 944.781     | 668.22 | 660.08 | 6125.83 | 513.35 | .145 | 315.90 | 8067.71 | 8186.26 | 111.73 | .06 | .3742 | 14.483 | .0000 |
| 959.781     | 667.54 | 659.62 | 6126.10 | 506.79 | .144 | 320.36 | 8291.30 | 8299.49 | 113.28 | .05 | .3741 | 14.486 | .0000 |
| 974.781     | 666.91 | 659.17 | 6126.33 | 500.86 | .142 | 324.81 | 8511.46 | 8411.28 | 114.84 | .05 | .3740 | 14.489 | .0000 |
| 989.781     | 666.30 | 658.74 | 6126.54 | 495.52 | .140 | 329.27 | 8728.22 | 8530.63 | 116.40 | .05 | .3739 | 14.492 | .0000 |
| 1004.781    | 665.73 | 658.31 | 6126.73 | 490.72 | .139 | 333.72 | 8941.55 | 8648.54 | 117.96 | .05 | .3738 | 14.493 | .0000 |
| 1019.781    | 665.17 | 657.90 | 6126.89 | 486.41 | .138 | 338.18 | 9151.47 | 8768.02 | 119.52 | .04 | .3738 | 14.495 | .0000 |
| 1034.781    | 664.65 | 657.49 | 6127.04 | 482.55 | .137 | 342.63 | 9357.97 | 8889.06 | 121.08 | .04 | .3737 | 14.495 | .0000 |
| 1049.791    | 664.14 | 657.33 | 6127.09 | 481.13 | .136 | 344.42 | 9439.75 | 8937.99 | 48.94  | .01 | .3736 | 14.496 | .0000 |
| 1064.791    | 663.69 | 656.93 | 6127.15 | 479.61 | .136 | 347.36 | 9605.76 | 9060.93 | 122.98 | .03 | .3736 | 14.494 | .0000 |
| 1079.791    | 663.26 | 656.54 | 6127.20 | 478.35 | .135 | 350.30 | 9768.83 | 9184.91 | 124.01 | .03 | .3735 | 14.492 | .0000 |
| 1094.791    | 662.81 | 656.19 | 6127.23 | 477.42 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1109.791    | 662.37 | 655.84 | 6127.25 | 476.48 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1124.791    | 661.94 | 655.49 | 6127.27 | 475.54 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1139.791    | 661.51 | 655.14 | 6127.29 | 474.60 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1154.791    | 661.08 | 654.79 | 6127.31 | 473.66 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1169.791    | 660.65 | 654.44 | 6127.33 | 472.72 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1184.791    | 660.22 | 654.09 | 6127.35 | 471.78 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1199.791    | 659.79 | 653.74 | 6127.37 | 470.84 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1214.791    | 659.36 | 653.39 | 6127.39 | 469.90 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1229.791    | 658.93 | 653.04 | 6127.41 | 468.96 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1244.791    | 658.50 | 652.69 | 6127.43 | 468.02 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1259.791    | 658.07 | 652.34 | 6127.45 | 467.08 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1274.791    | 657.64 | 651.99 | 6127.47 | 466.14 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1289.791    | 657.21 | 651.64 | 6127.49 | 465.20 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1304.781    | 656.78 | 651.29 | 6127.51 | 464.26 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1319.781    | 656.35 | 650.94 | 6127.53 | 463.32 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1334.781    | 655.92 | 650.59 | 6127.55 | 462.38 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1349.781    | 655.49 | 650.24 | 6127.57 | 461.44 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1364.781    | 655.06 | 649.89 | 6127.59 | 460.50 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1379.781    | 654.63 | 649.54 | 6127.61 | 459.56 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1394.781    | 654.20 | 649.19 | 6127.63 | 458.62 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1409.781    | 653.77 | 648.84 | 6127.65 | 457.68 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1424.781    | 653.34 | 648.49 | 6127.67 | 456.74 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1439.781    | 652.91 | 648.14 | 6127.69 | 455.80 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1454.781    | 652.48 | 647.79 | 6127.71 | 454.86 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1469.781    | 652.05 | 647.44 | 6127.73 | 453.92 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1484.781    | 651.62 | 647.09 | 6127.75 | 452.98 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1499.781    | 651.19 | 646.74 | 6127.77 | 452.04 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1514.781    | 650.76 | 646.39 | 6127.79 | 451.10 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1529.781    | 650.33 | 646.04 | 6127.81 | 450.16 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1544.781    | 649.90 | 645.69 | 6127.83 | 449.22 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1559.781    | 649.47 | 645.34 | 6127.85 | 448.28 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1574.781    | 649.04 | 644.99 | 6127.87 | 447.34 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1589.781    | 648.61 | 644.64 | 6127.89 | 446.40 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1604.781    | 648.18 | 644.29 | 6127.91 | 445.46 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1619.781    | 647.75 | 643.94 | 6127.93 | 444.52 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1634.781    | 647.32 | 643.59 | 6127.95 | 443.58 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1649.781    | 646.89 | 643.24 | 6127.97 | 442.64 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1664.781    | 646.46 | 642.89 | 6127.99 | 441.70 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1679.781    | 646.03 | 642.54 | 6128.01 | 440.76 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1694.781    | 645.60 | 642.19 | 6128.03 | 439.82 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1709.781    | 645.17 | 641.84 | 6128.05 | 438.88 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1724.781    | 644.74 | 641.49 | 6128.07 | 437.94 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1739.781    | 644.31 | 641.14 | 6128.09 | 437.00 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1754.781    | 643.88 | 640.79 | 6128.11 | 436.06 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1769.781    | 643.45 | 640.44 | 6128.13 | 435.12 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1784.781    | 643.02 | 640.09 | 6128.15 | 434.18 | .135 | 352.93 | 9911.82 | 9294.36 | 111.48 | .03 | .3734 | 14.490 | .0000 |
| 1799.781    | 642.59 | 639.74 | 6128.17 | 433.24 | .135 | 352    |         |         |        |     |       |        |       |

| SLOT                                    | PO        | P         | T         | U         | AP        | OWDOT  | AB      | RB     | DELTA  | WSLOT     |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------|-----------|
| INTERFACE                               | PSIA      | PSIA      | DEG. R    | FT/SEC    | SO. IN.   | LB/SEC | Sq. IN. | IN/SEC | TAU    | IN.       |
| LOCATION                                | IN.       |           |           |           |           |        |         |        |        |           |
| FORWARD                                 | 1.1676+02 | 6.8464+02 | 6.8341+02 | 7.2478+03 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 2.4379+03 |
| AFT                                     | 1.1677+02 | 6.8474+02 | 6.8351+02 | 7.2469+03 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 2.4379+03 |
| GAS BUILDUP IN SLOT, DW/DT = -3.6158+04 |           |           |           |           |           |        |         |        |        |           |
| FORWARD                                 | 4.2705+02 | 6.8154+02 | 6.7794+02 | 6.1317+03 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 4.5449+03 |
| AFT                                     | 4.2706+02 | 6.8297+02 | 6.7934+02 | 6.1337+03 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 4.5449+03 |
| GAS BUILDUP IN SLOT, DW/DT = -3.4940+04 |           |           |           |           |           |        |         |        |        |           |
| FORWARD                                 | 7.4634+02 | 6.7510+02 | 6.6685+02 | 6.1258+03 | 2.0592+02 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.7369+03 |
| AFT                                     | 7.4635+02 | 6.7799+02 | 6.6971+02 | 6.1299+03 | 2.0518+02 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.7369+03 |
| GAS BUILDUP IN SLOT, DW/DT = -3.2929+04 |           |           |           |           |           |        |         |        |        |           |

IGNITION TIME, TIME (S)

91.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                                               |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 10238655.     | 2301741.2    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 10832560.     | 2435256.3    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 32653.955     | 7340.9012    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOTI               | .49693568+09  | .11171559+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 257.74031     | 257.74031    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .53432495+09  | .12012103+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6256528     | 1.6256528    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 4268.2371     | 9409.8521    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 269730.35     | 462376.27    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 17.525141     | 38.636322    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 1857.1536     | 4094.3229    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 258.28827     | 400347.62    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 169.57352     | 10348011.    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 296217.41     | 653047.61    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 854.37173     | 1883.5672    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1597718     | 1.1597718    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.856270     | 28.343224    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1559.9059     | 5117.8016    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .14975847     | .14975847    |
| HEAD END PARAMETERS:                                            |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .44937642+09  | 651.76540    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .23299912+11  | 33793.666    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 31.576332     | 48943.413    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .94630904-02  | .37256262    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .41620898     | 16.386180    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 6.0190236     | 367303.36    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 49.084808     | 2995338.8    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3404.3470     | 6127.8246    |
| CYLINDRICAL SECTION PARAMETERS:                                 |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 212.64747     | 329604.24    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 161.57331     | 9859038.1    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 128.86979     | 7864117.3    |
| AFT END PARAMETERS:                                             |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .43209511+09  | 626.73097    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDY               | .21535355+11  | 31234.392    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 14.064472     | 21799.975    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | .93340969-02  | .36748413    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | .93314325-02  | .36737924    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | .40622804     | 15.993230    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | .40670237     | 16.011904    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | 1.7811967     | 120903.04    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 15.368232     | 919519.96    |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3401.2821     | 6122.2719    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 8.9165032     | 13820.608    |
| NOZZLE PARAMETERS:                                              |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5421405     | 2390.3225    |
| EXPANSION RATIO                                                 | EPR                  | 6.9698676     | 6.9698676    |
| PRESSURE RATIO                                                  | PEPO                 | .22390202-01  | .22390202-01 |
| MISCELLANEOUS PARAMETERS:                                       |                      |               |              |
| ANISOTHERMIC BURN RATE COEFFICIENT                              | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P       | PSIA    | DEG. R | T      | U       | M       | LP      | AP      | WOOT   | LB/SEC | OW/DT  | RB     | TAU  | IN/SEC | TAUTO |
|-----------------------------|--------|---------|---------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   |         |         |        |        | FT/SEC  |         | INCHES  | SQ. IN. | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FORE                        | 651.77 | 651.24  | 6127.82 | 93.09  | .026   | 283.37  | 6391.25 | 1159.28 | 1156.44 | -2.84  | .3724  | 16.386 | .0000  | .000 | .000   | .000  |
| 15.000                      | 651.46 | 651.15  | 6127.76 | 100.97 | .029   | 283.64  | 6403.33 | 1259.69 | 100.47  | .05    | .3721  | 16.356 | .0000  | .000 | .000   | .000  |
| 30.000                      | 651.05 | 6127.70 | 100.84  | .031   | 283.91 | 6415.41 | 1360.20 | 100.56  | .05     | .3723  | 16.352 | .0000  | .000   | .000 | .000   | .000  |
| 45.000                      | 651.36 | 650.94  | 6127.63 | 106.69 | .033   | 284.18  | 6427.49 | 1460.79 | 100.65  | .05    | .3723  | 16.347 | .0000  | .000 | .000   | .000  |
| 60.000                      | 651.30 | 650.83  | 6127.56 | 124.51 | .035   | 284.45  | 6439.56 | 1561.48 | 100.74  | .05    | .3723  | 16.343 | .0000  | .000 | .000   | .000  |
| 75.000                      | 651.24 | 650.71  | 6127.48 | 132.33 | .037   | 284.72  | 6451.64 | 1662.25 | 100.83  | .06    | .3723  | 16.338 | .0000  | .000 | .000   | .000  |
| 90.000                      | 651.17 | 650.58  | 6127.39 | 140.12 | .040   | 284.99  | 6463.71 | 1763.12 | 100.92  | .06    | .3722  | 16.334 | .0000  | .000 | .000   | .000  |
| 105.000                     | 651.11 | 650.44  | 6127.31 | 147.89 | .042   | 285.26  | 6475.78 | 1864.07 | 101.01  | .06    | .3722  | 16.329 | .0000  | .000 | .000   | .000  |
| 116.761                     | 651.05 | 650.33  | 6127.23 | 153.98 | .044   | 285.47  | 6485.24 | 1943.28 | 79.26   | .04    | .3722  | 16.325 | .0000  | .000 | .000   | .000  |
| 116.771                     | 651.05 | 650.38  | 6127.30 | 148.04 | .042   | 284.62  | 6745.08 | 1943.28 | .00     | .00    | .3722  | 16.326 | .0000  | .000 | .000   | .000  |
| 131.771                     | 651.02 | 650.25  | 6127.16 | 159.64 | .045   | 284.61  | 6580.36 | 2044.05 | 100.81  | .05    | .3722  | 16.326 | .0000  | .000 | .000   | .000  |
| 143.919                     | 650.99 | 650.12  | 6127.04 | 168.48 | .048   | 284.61  | 6446.81 | 2125.65 | 81.64   | .04    | .3721  | 16.319 | .0000  | .000 | .000   | .000  |
| 156.919                     | 650.93 | 649.96  | 6126.94 | 176.64 | .050   | 285.55  | 6480.64 | 2226.56 | 100.97  | .06    | .3721  | 16.314 | .0000  | .000 | .000   | .000  |
| 173.919                     | 650.81 | 649.79  | 6126.84 | 183.76 | .052   | 286.48  | 6514.41 | 2327.79 | 101.29  | .06    | .3721  | 16.309 | .0000  | .000 | .000   | .000  |
| 186.919                     | 650.71 | 649.61  | 6126.74 | 190.84 | .054   | 287.42  | 6548.13 | 2429.35 | 101.61  | .06    | .3720  | 16.304 | .0000  | .000 | .000   | .000  |
| 203.919                     | 650.61 | 649.42  | 6126.63 | 197.88 | .056   | 288.36  | 6581.78 | 2531.22 | 101.93  | .06    | .3720  | 16.299 | .0000  | .000 | .000   | .000  |
| 218.919                     | 650.50 | 649.23  | 6126.52 | 204.88 | .058   | 289.29  | 6615.38 | 2633.42 | 102.26  | .06    | .3720  | 16.293 | .0000  | .000 | .000   | .000  |
| 233.919                     | 650.39 | 649.03  | 6126.40 | 211.84 | .060   | 290.23  | 6648.93 | 2735.95 | 102.58  | .06    | .3719  | 16.288 | .0000  | .000 | .000   | .000  |
| 248.919                     | 650.27 | 648.83  | 6126.29 | 218.77 | .062   | 291.17  | 6682.41 | 2838.79 | 102.90  | .06    | .3719  | 16.283 | .0000  | .000 | .000   | .000  |
| 263.919                     | 650.15 | 648.62  | 6126.17 | 225.66 | .064   | 292.10  | 6715.84 | 2941.95 | 103.22  | .06    | .3719  | 16.278 | .0000  | .000 | .000   | .000  |
| 278.919                     | 650.03 | 648.40  | 6126.04 | 232.52 | .066   | 293.04  | 6749.21 | 3045.43 | 103.54  | .06    | .3718  | 16.272 | .0000  | .000 | .000   | .000  |
| 293.919                     | 649.90 | 648.18  | 6125.92 | 239.34 | .068   | 293.98  | 6782.52 | 3149.23 | 103.86  | .06    | .3718  | 16.267 | .0000  | .000 | .000   | .000  |
| 308.919                     | 649.77 | 647.95  | 6125.79 | 246.13 | .070   | 294.91  | 6815.77 | 3253.35 | 104.18  | .06    | .3717  | 16.261 | .0000  | .000 | .000   | .000  |
| 323.919                     | 649.64 | 647.71  | 6125.65 | 252.88 | .072   | 295.85  | 6848.97 | 3357.79 | 104.50  | .06    | .3717  | 16.256 | .0000  | .000 | .000   | .000  |
| 338.919                     | 649.50 | 647.47  | 6125.52 | 259.61 | .074   | 296.79  | 6882.11 | 3462.55 | 104.81  | .06    | .3716  | 16.250 | .0000  | .000 | .000   | .000  |
| 353.919                     | 649.36 | 647.22  | 6125.38 | 266.30 | .075   | 297.72  | 6915.17 | 3567.63 | 105.13  | .06    | .3716  | 16.244 | .0000  | .000 | .000   | .000  |
| 368.919                     | 649.21 | 646.97  | 6125.24 | 272.97 | .077   | 298.66  | 6948.22 | 3673.02 | 105.45  | .06    | .3715  | 16.239 | .0000  | .000 | .000   | .000  |
| 383.919                     | 649.06 | 646.71  | 6125.10 | 279.60 | .079   | 299.60  | 6981.18 | 3778.73 | 105.77  | .06    | .3715  | 16.233 | .0000  | .000 | .000   | .000  |
| 398.919                     | 648.91 | 646.44  | 6124.95 | 286.21 | .081   | 300.53  | 7014.09 | 3884.75 | 106.08  | .06    | .3714  | 16.227 | .0000  | .000 | .000   | .000  |
| 403.048                     | 648.86 | 646.37  | 6124.91 | 288.03 | .082   | 300.79  | 7023.14 | 3913.99 | 29.25   | .02    | .3714  | 16.221 | .0000  | .000 | .000   | .000  |
| 418.048                     | 648.71 | 646.09  | 6124.75 | 295.02 | .084   | 298.93  | 7045.01 | 4019.92 | 105.99  | .06    | .3714  | 16.220 | .0000  | .000 | .000   | .000  |
| 427.051                     | 648.62 | 645.93  | 6124.65 | 299.17 | .085   | 297.82  | 7058.38 | 4083.18 | 63.29   | .03    | .3713  | 16.215 | .0000  | .000 | .000   | .000  |
| 427.061                     | 648.43 | 646.98  | 6126.26 | 220.04 | .062   | 428.93  | 9583.71 | 4083.18 | .00     | .00    | .3715  | 16.236 | .0000  | .000 | .000   | .000  |
| 442.061                     | 648.86 | 646.77  | 6125.45 | 262.94 | .074   | 368.57  | 8298.06 | 4224.07 | 140.98  | .09    | .3715  | 16.237 | .0000  | .000 | .000   | .000  |
| 457.061                     | 648.64 | 645.50  | 6124.07 | 322.95 | .091   | 308.20  | 6959.64 | 4343.62 | 119.63  | .08    | .3714  | 16.210 | .0000  | .000 | .000   | .000  |
| 463.204                     | 648.17 | 645.38  | 6123.22 | 354.87 | .102   | 284.48  | 6396.28 | 4386.41 | 42.82   | .03    | .3712  | 16.172 | .0000  | .000 | .000   | .000  |
| 478.204                     | 648.96 | 645.03  | 6123.03 | 361.62 | .102   | 284.07  | 6423.61 | 4486.58 | 100.25  | .08    | .3712  | 16.152 | .0000  | .000 | .000   | .000  |
| 493.204                     | 648.75 | 644.67  | 6122.84 | 368.33 | .104   | 284.67  | 6450.91 | 4586.95 | 100.44  | .08    | .3711  | 16.144 | .0000  | .000 | .000   | .000  |
| 508.204                     | 648.54 | 644.31  | 6122.64 | 375.02 | .106   | 285.26  | 6478.23 | 4687.50 | 100.63  | .08    | .3710  | 16.137 | .0000  | .000 | .000   | .000  |
| 523.204                     | 648.32 | 643.94  | 6122.45 | 381.68 | .108   | 285.85  | 6505.45 | 4788.25 | 100.82  | .08    | .3709  | 16.129 | .0000  | .000 | .000   | .000  |
| 538.204                     | 648.10 | 643.57  | 6122.25 | 388.31 | .110   | 286.44  | 6532.69 | 4889.19 | 101.01  | .08    | .3709  | 16.122 | .0000  | .000 | .000   | .000  |
| 553.204                     | 647.87 | 643.19  | 6122.04 | 394.92 | .112   | 287.03  | 6559.90 | 4990.31 | 101.20  | .08    | .3708  | 16.114 | .0000  | .000 | .000   | .000  |
| 568.204                     | 647.64 | 642.80  | 6121.84 | 401.50 | .114   | 287.63  | 6587.08 | 5091.62 | 101.39  | .08    | .3707  | 16.106 | .0000  | .000 | .000   | .000  |
| 583.204                     | 647.41 | 642.41  | 6121.63 | 408.06 | .116   | 288.22  | 6614.24 | 5193.12 | 101.58  | .08    | .3706  | 16.098 | .0000  | .000 | .000   | .000  |
| 598.204                     | 647.17 | 642.02  | 6121.42 | 414.59 | .117   | 288.81  | 6641.38 | 5294.81 | 101.76  | .08    | .3706  | 16.091 | .0000  | .000 | .000   | .000  |
| 613.204                     | 646.93 | 641.62  | 6121.20 | 421.10 | .119   | 289.40  | 6668.44 | 5396.69 | 101.95  | .08    | .3705  | 16.083 | .0000  | .000 | .000   | .000  |

|          |        |        |         |        |      |        |         |          |        |     |       |        |         |      |
|----------|--------|--------|---------|--------|------|--------|---------|----------|--------|-----|-------|--------|---------|------|
| 628.204  | 646.69 | 641.21 | 6120.99 | 427.58 | .121 | 290.60 | 6695.58 | 5498.75  | 102.14 | .08 | .3704 | 16.075 | .0000   | .000 |
| 643.204  | 646.44 | 640.80 | 6120.77 | 434.04 | .123 | 290.59 | 6722.65 | 5601.00  | 102.32 | .08 | .3703 | 16.067 | .0000   | .000 |
| 658.204  | 646.19 | 640.38 | 6120.55 | 440.48 | .125 | 291.18 | 6749.69 | 5703.43  | 102.51 | .08 | .3702 | 16.059 | .0000   | .000 |
| 673.204  | 645.93 | 639.76 | 6120.33 | 446.90 | .127 | 291.77 | 6776.70 | 5805.05  | 102.70 | .08 | .3701 | 16.051 | .0000   | .000 |
| 688.204  | 645.67 | 639.53 | 6120.10 | 453.29 | .128 | 292.36 | 6803.70 | 5906.86  | 102.88 | .08 | .3701 | 16.043 | .0000   | .000 |
| 703.204  | 645.41 | 639.29 | 6119.87 | 459.67 | .130 | 292.96 | 6830.67 | 6011.85  | 103.07 | .08 | .3700 | 16.035 | .0000   | .000 |
| 718.204  | 645.14 | 638.65 | 6119.64 | 466.02 | .132 | 293.55 | 6857.61 | 6115.02  | 103.25 | .08 | .3699 | 16.028 | .0000   | .000 |
| 733.204  | 644.99 | 638.41 | 6119.42 | 469.40 | .133 | 293.86 | 6884.55 | 6217.03  | 103.43 | .08 | .3698 | 16.020 | .0000   | .000 |
| 748.204  | 644.73 | 638.17 | 6119.20 | 471.77 | .134 | 294.55 | 6911.49 | 6318.04  | 103.61 | .08 | .3697 | 16.012 | .0000   | .000 |
| 763.204  | 644.47 | 637.92 | 6118.97 | 474.14 | .134 | 295.24 | 6938.43 | 6419.05  | 103.79 | .08 | .3696 | 16.004 | .0000   | .000 |
| 778.204  | 644.21 | 637.67 | 6118.75 | 476.51 | .134 | 295.93 | 6965.37 | 6520.06  | 103.97 | .08 | .3695 | 15.996 | .0000   | .000 |
| 793.204  | 643.95 | 637.42 | 6118.53 | 478.88 | .134 | 296.62 | 6992.31 | 6621.07  | 104.15 | .08 | .3694 | 15.988 | .0000   | .000 |
| 808.204  | 643.69 | 637.17 | 6118.31 | 481.25 | .134 | 297.31 | 7019.25 | 6722.08  | 104.33 | .08 | .3693 | 15.980 | .0000   | .000 |
| 823.204  | 643.43 | 636.92 | 6118.09 | 483.62 | .134 | 298.00 | 7046.19 | 6823.09  | 104.51 | .08 | .3692 | 15.972 | .0000   | .000 |
| 838.204  | 643.17 | 636.67 | 6117.87 | 485.99 | .134 | 298.69 | 7073.13 | 6924.10  | 104.69 | .08 | .3691 | 15.964 | .0000   | .000 |
| 853.204  | 642.91 | 636.42 | 6117.65 | 488.36 | .134 | 299.38 | 7100.07 | 7025.11  | 104.87 | .08 | .3690 | 15.956 | .0000   | .000 |
| 868.204  | 642.65 | 636.17 | 6117.43 | 490.73 | .134 | 300.07 | 7127.01 | 7126.12  | 105.05 | .08 | .3689 | 15.948 | .0000   | .000 |
| 883.204  | 642.39 | 635.92 | 6117.21 | 493.10 | .134 | 300.76 | 7153.95 | 7227.13  | 105.23 | .08 | .3688 | 15.940 | .0000   | .000 |
| 898.204  | 642.13 | 635.67 | 6116.99 | 495.47 | .134 | 301.45 | 7180.89 | 7328.14  | 105.41 | .08 | .3687 | 15.932 | .0000   | .000 |
| 913.204  | 641.87 | 635.42 | 6116.77 | 497.84 | .134 | 302.14 | 7207.83 | 7429.15  | 105.59 | .08 | .3686 | 15.924 | .0000   | .000 |
| 928.204  | 641.61 | 635.17 | 6116.55 | 500.21 | .134 | 302.83 | 7234.77 | 7530.16  | 105.77 | .08 | .3685 | 15.916 | .0000   | .000 |
| 943.204  | 641.35 | 634.92 | 6116.33 | 502.58 | .134 | 303.52 | 7261.71 | 7631.17  | 105.95 | .08 | .3684 | 15.908 | .0000   | .000 |
| 958.204  | 641.09 | 634.67 | 6116.11 | 504.95 | .134 | 304.21 | 7288.65 | 7732.18  | 106.13 | .08 | .3683 | 15.900 | .0000   | .000 |
| 973.204  | 640.83 | 634.42 | 6115.89 | 507.32 | .134 | 304.90 | 7315.59 | 7833.19  | 106.31 | .08 | .3682 | 15.892 | .0000   | .000 |
| 988.204  | 640.57 | 634.17 | 6115.67 | 509.69 | .134 | 305.59 | 7342.53 | 7934.20  | 106.49 | .08 | .3681 | 15.884 | .0000   | .000 |
| 1003.204 | 640.31 | 633.92 | 6115.45 | 512.06 | .134 | 306.28 | 7369.47 | 8035.21  | 106.67 | .08 | .3680 | 15.876 | .0000   | .000 |
| 1018.204 | 640.05 | 633.67 | 6115.23 | 514.43 | .134 | 306.97 | 7396.41 | 8136.22  | 106.85 | .08 | .3679 | 15.868 | .0000   | .000 |
| 1033.204 | 639.79 | 633.42 | 6115.01 | 516.80 | .134 | 307.66 | 7423.35 | 8237.23  | 107.03 | .08 | .3678 | 15.860 | .0000   | .000 |
| 1048.204 | 639.53 | 633.17 | 6114.79 | 519.17 | .134 | 308.35 | 7450.29 | 8338.24  | 107.21 | .08 | .3677 | 15.852 | .0000   | .000 |
| 1063.204 | 639.27 | 632.92 | 6114.57 | 521.54 | .134 | 309.04 | 7477.23 | 8439.25  | 107.39 | .08 | .3676 | 15.844 | .0000   | .000 |
| 1078.204 | 639.01 | 632.67 | 6114.35 | 523.91 | .134 | 309.73 | 7504.17 | 8540.26  | 107.57 | .08 | .3675 | 15.836 | .0000   | .000 |
| 1093.204 | 638.75 | 632.42 | 6114.13 | 526.28 | .134 | 310.42 | 7531.11 | 8641.27  | 107.75 | .08 | .3674 | 15.828 | .0000   | .000 |
| 1108.204 | 638.49 | 632.17 | 6113.91 | 528.65 | .134 | 311.11 | 7558.05 | 8742.28  | 107.93 | .08 | .3673 | 15.820 | .0000   | .000 |
| 1123.204 | 638.23 | 631.92 | 6113.69 | 531.02 | .134 | 311.80 | 7584.99 | 8843.29  | 108.11 | .08 | .3672 | 15.812 | .0000   | .000 |
| 1138.204 | 637.97 | 631.67 | 6113.47 | 533.39 | .134 | 312.49 | 7611.93 | 8944.30  | 108.29 | .08 | .3671 | 15.804 | .0000   | .000 |
| 1153.204 | 637.71 | 631.42 | 6113.25 | 535.76 | .134 | 313.18 | 7638.87 | 9045.31  | 108.47 | .08 | .3670 | 15.796 | .0000   | .000 |
| 1168.204 | 637.45 | 631.17 | 6113.03 | 538.13 | .134 | 313.87 | 7665.81 | 9146.32  | 108.65 | .08 | .3669 | 15.788 | .0000   | .000 |
| 1183.204 | 637.19 | 630.92 | 6112.81 | 540.50 | .134 | 314.56 | 7692.75 | 9247.33  | 108.83 | .08 | .3668 | 15.780 | .0000   | .000 |
| 1198.204 | 636.93 | 630.67 | 6112.59 | 542.87 | .134 | 315.25 | 7719.69 | 9348.34  | 109.01 | .08 | .3667 | 15.772 | .0000   | .000 |
| 1213.204 | 636.67 | 630.42 | 6112.37 | 545.24 | .134 | 315.94 | 7746.63 | 9449.35  | 109.19 | .08 | .3666 | 15.764 | .0000   | .000 |
| 1228.204 | 636.41 | 630.17 | 6112.15 | 547.61 | .134 | 316.63 | 7773.57 | 9550.36  | 109.37 | .08 | .3665 | 15.756 | .0000   | .000 |
| 1243.204 | 636.15 | 629.92 | 6111.93 | 550.00 | .134 | 317.32 | 7800.51 | 9651.37  | 109.55 | .08 | .3664 | 15.748 | .0000   | .000 |
| 1258.204 | 635.89 | 629.67 | 6111.71 | 552.37 | .134 | 318.01 | 7827.45 | 9752.38  | 109.73 | .08 | .3663 | 15.740 | .0000   | .000 |
| 1273.204 | 635.63 | 629.42 | 6111.49 | 554.74 | .134 | 318.70 | 7854.39 | 9853.39  | 109.91 | .08 | .3662 | 15.732 | .0000   | .000 |
| 1288.204 | 635.37 | 629.17 | 6111.27 | 557.11 | .134 | 319.39 | 7881.33 | 9954.40  | 110.09 | .08 | .3661 | 15.724 | .0000   | .000 |
| 1303.204 | 635.11 | 628.92 | 6111.05 | 559.50 | .134 | 320.08 | 7908.27 | 10055.41 | 110.27 | .08 | .3660 | 15.716 | .0000   | .000 |
| 1318.204 | 634.85 | 628.67 | 6110.83 | 561.87 | .134 | 320.77 | 7935.21 | 10156.42 | 110.45 | .08 | .3659 | 15.708 | .0000   | .000 |
| 1333.204 | 634.59 | 628.42 | 6110.61 | 564.24 | .134 | 321.46 | 7962.15 | 10257.43 | 110.63 | .08 | .3658 | 15.700 | .0000   | .000 |
| 1348.204 | 634.33 | 628.17 | 6110.39 | 566.61 | .134 | 322.15 | 7989.09 | 10358.44 | 110.81 | .08 | .3657 | 15.692 | .0000   | .000 |
| 1363.204 | 634.07 | 627.92 | 6110.17 | 568.98 | .134 | 322.84 | 8016.03 | 10459.45 | 110.99 | .08 | .3656 | 15.684 | .0000   | .000 |
| 1378.204 | 633.81 | 627.67 | 6109.95 | 571.35 | .134 | 323.53 | 8042.97 | 10560.46 | 111.17 | .08 | .3655 | 15.676 | .0000   | .000 |
| 1393.204 | 633.55 | 627.42 | 6109.73 | 573.72 | .134 | 324.22 | 8069.91 | 10661.47 | 111.35 | .08 | .3654 | 15.668 | .0000   | .000 |
| 1408.204 | 633.29 | 627.17 | 6109.51 | 576.09 | .134 | 324.91 | 8096.85 | 10762.48 | 111.53 | .08 | .3653 | 15.660 | .0000   | .000 |
| 1423.204 | 633.03 | 626.92 | 6109.29 | 578.46 | .134 | 325.60 | 8123.79 | 10863.49 | 111.71 | .08 | .3652 | 15.652 | .0000   | .000 |
| 1438.204 | 632.77 | 626.67 | 6109.07 | 580.83 | .134 | 326.29 | 8150.73 | 10964.50 | 111.89 | .08 | .3651 | 15.644 | .0000   | .000 |
| 1453.204 | 632.51 | 626.42 | 6108.85 | 583.20 | .134 | 326.98 | 8177.67 | 11065.51 | 112.07 | .08 | .3650 | 15.636 | .0000   | .000 |
| 1468.204 | 632.25 | 626.17 | 6108.63 | 585.57 | .134 | 327.67 | 8204.61 | 11166.52 | 112.25 | .08 | .3649 | 15.628 | .0000   | .000 |
| 1483.204 | 632.00 | 625.92 | 6108.41 | 587.94 | .134 | 328.36 | 8231.55 | 11267.53 | 112.43 | .08 | .3648 | 15.620 | .0000   | .000 |
| 1498.204 | 631.74 | 625.67 | 6108.19 | 590.31 | .134 | 329.05 | 8258.49 | 11368.54 | 112.61 | .08 | .3647 | 15.612 | .0000   | .000 |
| 1513.204 | 631.48 | 625.42 | 6107.97 | 592.68 | .134 | 329.74 | 8285.43 | 11469.55 | 112.79 | .08 | .3646 | 15.604 | .0000   | .000 |
| 1528.204 | 631.22 | 625.17 | 6107.75 | 595.05 | .134 | 330.43 | 8312.37 | 11570.56 | 112.97 | .08 | .3645 | 15.596 | .0000   | .000 |
| 1543.204 | 630.96 | 624.92 | 6107.53 | 597.42 | .134 | 331.12 | 8339.31 | 11671.57 | 113.15 | .08 | .3644 | 15.588 | .0000   | .000 |
| 1558.204 | 630.70 | 624.67 | 6107.31 | 599.79 | .134 | 331.81 | 8366.25 | 11772.58 | 113.33 | .08 | .3643 | 15.580 | .0000   | .000 |
| 1573.204 | 630.44 | 624.42 | 6107.09 | 602.16 | .134 | 332.50 | 8393.19 | 11873.59 | 113.51 | .08 | .3642 | 15.572 | .0000   | .000 |
| 1588.204 | 630.18 | 624.17 | 6106.87 | 604.53 | .134 | 333.19 | 8420.13 | 11974.60 | 113.69 | .08 | .3641 | 15.564 | .0000   | .000 |
| 1603.204 | 629.92 | 623.92 | 6106.65 | 606.90 | .134 | 333.88 | 8447.07 | 12075.61 | 113.87 | .08 | .3640 | 15.556 | .0000   | .000 |
| 1618.204 | 629.66 | 623.67 | 6106.43 | 609.27 | .134 | 334.57 | 8474.01 | 12176.62 | 114.05 | .08 | .3639 | 15.548 | .0000   | .000 |
| 1633.204 | 629.40 | 623.42 | 6106.21 | 611.64 | .134 | 335.26 | 8500.95 | 12277.63 | 114.23 | .08 | .3638 | 15.540 | .0000   | .000 |
| 1648.204 | 629.14 | 623.17 | 6105.99 | 614.01 | .134 | 335.95 | 8527.89 | 12378.64 | 114.41 | .08 | .3637 | 15.532 | .0000   | .000 |
| 1663.204 | 628.88 | 622.92 | 6105.77 | 616.38 | .134 | 336.64 | 8554.83 | 12479.65 | 114.59 | .08 | .3636 | 15.524 | .0000   | .000 |
| 1678.204 | 628.62 | 622.67 | 6105.55 | 618.75 | .134 | 337.33 | 8581.77 | 12580.66 | 114.77 | .08 | .3635 | 15.516 | .0000   | .000 |
| 1693.204 | 628.36 | 622.42 | 6105.33 | 621.12 | .134 | 338.02 | 8608.71 | 12681.67 | 114.95 | .08 | .3634 | 15.508 | .0000   | .000 |
| 1708.204 | 628.10 | 622.17 | 6105.11 | 623.49 | .134 | 338.71 | 8635.65 | 12782.68 | 115.13 | .08 | .3633 | 15.500 | .0000   | .000 |
| 1723.204 | 627.84 | 621.92 | 6104.89 | 625.86 | .134 | 339.40 | 8662.59 | 12883.69 | 115.31 | .08 | .3632 | 15.492 | .0000   | .000 |
| 1738.204 | 627.58 | 621.67 | 6104.67 | 628.23 | .134 | 340.09 | 8689.53 | 12984.70 | 115.49 | .08 | .3631 | 15.484 | .0000   | .000 |
| 1753.204 | 627.32 | 621.42 | 6104.45 | 630.60 | .134 | 340.78 | 8716.47 | 13085.71 | 115.67 | .08 | .3630 | 15.476 | .0000</ |      |



| SLOT                                    |           | PO        | P         | T         | U         | AP        | DMDOT  | AB      | RB     | DELTA  | WSLOT     |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------|-----------|
| INTERFACE                               |           | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | TAU    | IN.       |
| LOCATION                                |           | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | TAU    | IN.       |
| FORWARD                                 | 1.1676+02 | 6.5105+02 | 6.5033+02 | 6.1272+03 | 6.0667+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.9433+03 |
| AFT                                     | 1.1677+02 | 6.5110+02 | 6.5038+02 | 6.1273+03 | 6.0663+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.9433+03 |
| GAS BUILDUP IN SLOT, DM/DI = -3.4406-04 |           |           |           |           |           |           |        |         |        |        |           |
| FORWARD                                 | 4.2705+02 | 6.4862+02 | 6.4593+02 | 6.1247+03 | 1.2889+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 4.0832+03 |
| AFT                                     | 4.2706+02 | 6.4967+02 | 6.4698+02 | 6.1263+03 | 1.2872+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 4.0832+03 |
| GAS BUILDUP IN SLOT, DM/DI = -3.3387-04 |           |           |           |           |           |           |        |         |        |        |           |
| FORWARD                                 | 7.4634+02 | 6.4445+02 | 6.3781+02 | 6.1194+03 | 2.0153+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.3094+03 |
| AFT                                     | 7.4635+02 | 6.4680+02 | 6.4013+02 | 6.1229+03 | 2.0091+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.3094+03 |
| GAS BUILDUP IN SLOT, DM/DI = -2.9380-04 |           |           |           |           |           |           |        |         |        |        |           |



IGNITION TIME, TIME (S) 45.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|--------------------------------------------|----------------------|---------------|---------------|
| MOTOR PARAMETERS:                          |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9930825.2     | 2232538.3     |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10449454.     | 2349130.8     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 30433.277     | 6841.6728     |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | 53720610*07   | 12076874*09   |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.56953     | 257.56953     |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | 57681952*09   | 12967419*09   |
| THRUST COEFFICIENT                         | CF                   | 1.6251738     | 1.6251738     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4120.5994     | 9084.3666     |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 226488.74     | 499322.21     |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 16.333319     | 36.008804     |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1790.7860     | 3948.0074     |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 253.02207     | 392184.99     |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 159.96461     | 9761639.2     |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 279453.41     | 616889.31     |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 861.92812     | 1900.2262     |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597447     | 1.1597447     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.851228     | 28.332108     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.5860     | 5116.7520     |
| MAXIMUM CHAMBER HATCH NUMBER               | AMPN                 | 0.13994618    | 0.13994618    |
| HEAD END PARAMETERS:                       |                      |               |               |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 643068372*09  | 624.65394     |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | 25057480*11   | 36342.803     |
| BURN AREA (M**2,IN**2)                     | AHH                  | 20.969875     | 32348.372     |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | 93249743*02   | 0.36712447    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 45390541      | 17.870292     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 50391224      | 307506.12     |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 50.064710     | 3055136.0     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3400.9200     | 6121.6559     |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |               |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 219.01792     | 339478.45     |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | 0.00000000    | 0.00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 153.45057     | 9364128.1     |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 136.99284     | 8359815.8     |
| AFT END PARAMETERS:                        |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 41601292*09   | 603.37574     |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDY               | 23228782*11   | 33690.500     |
| BURN AREA (M**2,IN**2)                     | AAN                  | 13.134276     | 20358.169     |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NT*1,1)          | 92119812*02   | 0.36267643    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1*2,1)          | 92083144*02   | 0.36253206    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1*1,1)         | 44342183      | 17.457553     |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1*2,1)         | 44388443      | 17.475765     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 14747207      | 90005.181     |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 15.574509     | 950414.82     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(N1*2,3)         | 3398.2185     | 6116.7933     |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 9.3131614     | 14435.429     |
| NOZZLE PARAMETERS:                         |                      |               |               |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5455640     | 2395.6289     |
| EXPANSION RATIO                            | EPR                  | 6.9544291     | 6.9544291     |
| PRESSURE RATIO                             | PEPO                 | 0.22456937*01 | 0.22456937*01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | 0.37810250*01 | 0.37810250*01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000     |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | H    | LP     | INCHES   | 50. IN. | WDOT   | DWDOT  | LB/SEC | DW/DT  | RB    | TAU  | R8TO | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|-------|------|------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      |        |          |         |        |        |        |        |       |      |      |       |
| FUNE                        | 624.65 | 624.45 | 6121.66 | 59.26  | .017 | 292.72 | 6810.48  | 755.36  | 753.11 | -24.25 | .3669  | 17.870 | .0000 | .000 |      |       |
| 15.000                      | 624.53 | 624.39 | 6121.62 | 67.15  | .019 | 292.98 | 6830.95  | 857.52  | 102.26 | .10    | .3669  | 17.839 | .0000 | .000 |      |       |
| 30.000                      | 624.50 | 624.33 | 6121.57 | 75.03  | .021 | 293.25 | 6843.41  | 959.78  | 102.35 | .10    | .3669  | 17.835 | .0000 | .000 |      |       |
| 45.000                      | 624.46 | 624.26 | 6121.52 | 82.89  | .023 | 293.52 | 6855.66  | 1062.12 | 102.44 | .10    | .3669  | 17.830 | .0000 | .000 |      |       |
| 60.000                      | 624.42 | 624.19 | 6121.47 | 90.73  | .026 | 293.78 | 6868.31  | 1164.55 | 102.53 | .10    | .3669  | 17.826 | .0000 | .000 |      |       |
| 75.000                      | 624.38 | 624.10 | 6121.41 | 98.55  | .028 | 294.05 | 6880.76  | 1267.06 | 102.62 | .10    | .3668  | 17.821 | .0000 | .000 |      |       |
| 90.000                      | 624.34 | 624.01 | 6121.35 | 106.35 | .030 | 294.31 | 6893.20  | 1369.67 | 102.71 | .10    | .3668  | 17.817 | .0000 | .000 |      |       |
| 105.000                     | 624.29 | 623.91 | 6121.28 | 114.14 | .032 | 294.58 | 6905.64  | 1472.36 | 102.80 | .10    | .3668  | 17.812 | .0000 | .000 |      |       |
| 116.761                     | 624.25 | 623.83 | 6121.23 | 120.23 | .034 | 294.79 | 6915.40  | 1552.94 | 80.66  | .08    | .3668  | 17.807 | .0000 | .000 |      |       |
| 116.771                     | 624.25 | 623.86 | 6121.27 | 115.93 | .033 | 290.62 | 7171.50  | 1552.94 | .00    | .00    | .3668  | 17.808 | .0000 | .000 |      |       |
| 131.771                     | 624.22 | 623.75 | 6121.17 | 126.42 | .036 | 292.46 | 7008.12  | 1654.62 | 101.77 | .10    | .3668  | 17.809 | .0000 | .000 |      |       |
| 143.919                     | 624.19 | 623.66 | 6121.08 | 135.32 | .030 | 293.95 | 6875.66  | 1737.42 | 82.89  | .08    | .3668  | 17.802 | .0000 | .000 |      |       |
| 158.919                     | 624.13 | 623.54 | 6121.00 | 142.61 | .040 | 294.88 | 6910.93  | 1840.09 | 102.77 | .10    | .3667  | 17.796 | .0000 | .000 |      |       |
| 173.919                     | 624.05 | 623.40 | 6120.91 | 149.86 | .042 | 295.02 | 6946.13  | 1943.07 | 103.09 | .10    | .3667  | 17.791 | .0000 | .000 |      |       |
| 188.919                     | 623.98 | 623.26 | 6120.83 | 157.07 | .044 | 296.75 | 6981.25  | 2046.37 | 103.41 | .10    | .3667  | 17.786 | .0000 | .000 |      |       |
| 203.919                     | 623.90 | 623.12 | 6120.74 | 164.23 | .047 | 297.69 | 7016.31  | 2149.99 | 103.72 | .11    | .3667  | 17.781 | .0000 | .000 |      |       |
| 218.919                     | 623.82 | 622.97 | 6120.64 | 171.35 | .049 | 298.62 | 7051.30  | 2253.93 | 104.04 | .11    | .3666  | 17.775 | .0000 | .000 |      |       |
| 233.919                     | 623.73 | 622.81 | 6120.54 | 178.44 | .051 | 299.56 | 7086.21  | 2358.18 | 104.36 | .11    | .3666  | 17.770 | .0000 | .000 |      |       |
| 248.919                     | 623.64 | 622.64 | 6120.44 | 185.49 | .053 | 300.49 | 7121.06  | 2462.75 | 104.68 | .11    | .3666  | 17.764 | .0000 | .000 |      |       |
| 263.919                     | 623.55 | 622.47 | 6120.34 | 192.50 | .055 | 301.42 | 7155.84  | 2567.64 | 104.99 | .11    | .3665  | 17.759 | .0000 | .000 |      |       |
| 278.919                     | 623.45 | 622.30 | 6120.23 | 199.47 | .057 | 302.36 | 7190.54  | 2672.84 | 105.31 | .11    | .3665  | 17.753 | .0000 | .000 |      |       |
| 293.919                     | 623.35 | 622.11 | 6120.12 | 206.41 | .058 | 303.29 | 7225.18  | 2778.35 | 105.62 | .11    | .3665  | 17.748 | .0000 | .000 |      |       |
| 308.919                     | 623.24 | 621.93 | 6120.01 | 213.31 | .060 | 304.23 | 7259.74  | 2884.19 | 105.94 | .11    | .3664  | 17.742 | .0000 | .000 |      |       |
| 323.919                     | 623.13 | 621.73 | 6119.89 | 220.18 | .062 | 305.16 | 7294.24  | 2990.33 | 106.25 | .11    | .3664  | 17.736 | .0000 | .000 |      |       |
| 338.919                     | 623.02 | 621.53 | 6119.77 | 227.01 | .064 | 306.10 | 7328.67  | 3096.79 | 106.57 | .11    | .3663  | 17.731 | .0000 | .000 |      |       |
| 353.919                     | 622.91 | 621.32 | 6119.65 | 233.82 | .066 | 307.03 | 7363.02  | 3203.57 | 106.88 | .11    | .3663  | 17.725 | .0000 | .000 |      |       |
| 368.919                     | 622.79 | 621.11 | 6119.52 | 240.59 | .068 | 307.96 | 7397.31  | 3310.66 | 107.20 | .11    | .3663  | 17.719 | .0000 | .000 |      |       |
| 383.919                     | 622.66 | 620.89 | 6119.39 | 247.34 | .070 | 308.90 | 7431.52  | 3418.06 | 107.51 | .11    | .3662  | 17.713 | .0000 | .000 |      |       |
| 398.919                     | 622.53 | 620.67 | 6119.26 | 254.05 | .072 | 309.83 | 7465.67  | 3525.77 | 107.82 | .11    | .3662  | 17.707 | .0000 | .000 |      |       |
| 403.048                     | 622.50 | 620.60 | 6119.22 | 255.89 | .075 | 310.79 | 7475.06  | 3555.47 | 29.73  | .03    | .3661  | 17.701 | .0000 | .000 |      |       |
| 418.048                     | 622.38 | 620.37 | 6119.08 | 263.06 | .075 | 308.23 | 7494.13  | 3663.09 | 107.73 | .11    | .3661  | 17.699 | .0000 | .000 |      |       |
| 427.051                     | 622.30 | 620.23 | 6118.99 | 267.31 | .076 | 307.12 | 7505.82  | 3727.37 | 64.34  | .06    | .3661  | 17.694 | .0000 | .000 |      |       |
| 427.061                     | 622.15 | 621.04 | 6120.28 | 196.07 | .056 | 433.52 | 10221.90 | 3727.37 | .00    | .00    | .3662  | 17.716 | .0000 | .000 |      |       |
| 442.061                     | 622.47 | 620.87 | 6119.63 | 235.02 | .067 | 375.12 | 8851.48  | 3868.14 | 140.92 | .15    | .3662  | 17.717 | .0000 | .000 |      |       |
| 457.061                     | 622.29 | 619.87 | 6118.51 | 289.36 | .082 | 316.72 | 7423.68  | 3988.57 | 120.56 | .13    | .3662  | 17.689 | .0000 | .000 |      |       |
| 463.204                     | 622.69 | 619.76 | 6117.82 | 318.31 | .090 | 292.00 | 6822.39  | 4032.01 | 43.48  | .05    | .3660  | 17.651 | .0000 | .000 |      |       |
| 478.204                     | 622.52 | 619.47 | 6117.65 | 325.16 | .092 | 293.39 | 6850.58  | 4133.90 | 102.08 | .11    | .3659  | 17.631 | .0000 | .000 |      |       |
| 493.204                     | 622.34 | 619.16 | 6117.47 | 331.99 | .094 | 293.98 | 6878.74  | 4236.15 | 102.27 | .11    | .3659  | 17.623 | .0000 | .000 |      |       |
| 508.204                     | 622.16 | 618.85 | 6117.29 | 338.79 | .096 | 294.57 | 6906.86  | 4338.51 | 102.46 | .11    | .3658  | 17.615 | .0000 | .000 |      |       |
| 523.204                     | 621.98 | 618.53 | 6117.11 | 345.56 | .098 | 295.15 | 6934.95  | 4441.05 | 102.65 | .11    | .3657  | 17.607 | .0000 | .000 |      |       |
| 538.204                     | 621.79 | 618.21 | 6116.92 | 352.30 | .100 | 295.74 | 6963.01  | 4543.78 | 102.84 | .11    | .3657  | 17.599 | .0000 | .000 |      |       |
| 553.204                     | 621.63 | 617.98 | 6116.74 | 359.01 | .102 | 296.33 | 6991.03  | 4646.69 | 103.02 | .11    | .3656  | 17.591 | .0000 | .000 |      |       |
| 568.204                     | 621.41 | 617.55 | 6116.55 | 365.70 | .104 | 296.92 | 7019.42  | 4749.79 | 103.21 | .11    | .3655  | 17.583 | .0000 | .000 |      |       |
| 583.204                     | 621.21 | 617.21 | 6116.35 | 372.36 | .106 | 297.51 | 7046.97  | 4853.38 | 103.39 | .11    | .3655  | 17.575 | .0000 | .000 |      |       |
| 598.204                     | 621.01 | 616.87 | 6116.16 | 379.00 | .107 | 298.10 | 7074.89  | 4956.55 | 103.58 | .11    | .3654  | 17.567 | .0000 | .000 |      |       |
| 613.204                     | 620.81 | 616.52 | 6115.96 | 385.61 | .109 | 298.69 | 7102.71  | 5060.21 | 103.76 | .11    | .3653  | 17.559 | .0000 | .000 |      |       |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 628.204  | 620.59 | 616.16 | 6115.76 | 392.20 | .111 | 299.28 | 7130.64  | 5164.05 | 103.95 | .11 | .3653 | 17.551 | .0000 | .000  |
| 643.204  | 620.38 | 615.80 | 6115.56 | 398.77 | .113 | 299.87 | 7150.46  | 5260.37 | 104.13 | .11 | .3652 | 17.542 | .0000 | .000  |
| 658.204  | 620.16 | 615.44 | 6115.35 | 405.31 | .115 | 300.45 | 7166.24  | 5372.28 | 104.32 | .11 | .3651 | 17.534 | .0000 | .000  |
| 673.204  | 619.94 | 615.06 | 6115.14 | 411.83 | .117 | 301.04 | 7214.00  | 5476.67 | 104.50 | .11 | .3650 | 17.526 | .0000 | .000  |
| 688.204  | 619.72 | 614.69 | 6114.93 | 418.33 | .119 | 301.63 | 7241.72  | 5581.24 | 104.68 | .11 | .3650 | 17.518 | .0000 | .000  |
| 703.204  | 619.49 | 614.30 | 6114.71 | 424.81 | .120 | 302.22 | 7269.40  | 5686.00 | 104.86 | .11 | .3649 | 17.510 | .0000 | .000  |
| 718.204  | 619.26 | 613.92 | 6114.50 | 431.27 | .122 | 302.81 | 7297.05  | 5790.94 | 105.05 | .11 | .3648 | 17.501 | .0000 | .000  |
| 726.191  | 619.13 | 613.71 | 6114.38 | 434.70 | .123 | 303.12 | 7311.76  | 5846.88 | 105.00 | .06 | .3647 | 17.493 | .0000 | .000  |
| 741.191  | 618.79 | 613.31 | 6114.30 | 437.02 | .124 | 305.12 | 7408.66  | 5952.34 | 105.56 | .11 | .3647 | 17.486 | .0000 | .000  |
| 746.336  | 618.67 | 613.18 | 6114.27 | 437.83 | .124 | 305.81 | 7441.80  | 5988.66 | 106.36 | .04 | .3646 | 17.485 | .0000 | .000  |
| 746.346  | 618.39 | 615.11 | 6117.31 | 337.64 | .096 | 410.14 | 9624.53  | 5980.66 | .00    | .00 | .3650 | 17.529 | .0000 | .000  |
| 761.346  | 618.79 | 614.81 | 6116.35 | 372.64 | .106 | 377.24 | 8922.70  | 6125.26 | 136.75 | .15 | .3650 | 17.525 | .0000 | .000  |
| 776.346  | 618.59 | 613.69 | 6115.08 | 413.53 | .117 | 344.35 | 8217.79  | 6250.44 | 125.32 | .14 | .3649 | 17.502 | .0000 | .000  |
| 791.346  | 618.37 | 612.26 | 6113.43 | 461.64 | .131 | 311.45 | 7510.69  | 6364.16 | 113.85 | .13 | .3647 | 17.476 | .0000 | .000  |
| 794.831  | 618.60 | 612.17 | 6112.98 | 473.86 | .134 | 303.81 | 7346.05  | 6388.92 | 24.89  | .03 | .3644 | 17.446 | .0000 | .000  |
| 809.831  | 618.30 | 611.73 | 6112.80 | 478.85 | .136 | 304.81 | 7394.49  | 6494.34 | 105.53 | .12 | .3644 | 17.441 | .0000 | .000  |
| 824.831  | 618.00 | 611.30 | 6112.61 | 483.81 | .137 | 305.80 | 7442.80  | 6600.08 | 105.86 | .12 | .3643 | 17.439 | .0000 | .000  |
| 839.831  | 617.69 | 610.86 | 6112.42 | 488.76 | .139 | 306.80 | 7490.98  | 6706.14 | 106.18 | .12 | .3642 | 17.427 | .0000 | .000  |
| 854.781  | 617.39 | 610.42 | 6112.23 | 493.68 | .140 | 307.79 | 7538.87  | 6812.17 | 106.14 | .12 | .3641 | 17.420 | .0000 | .000  |
| 869.781  | 616.69 | 609.98 | 6112.57 | 404.78 | .137 | 312.24 | 7804.30  | 6919.46 | 107.41 | .12 | .3640 | 17.413 | .0000 | .000  |
| 884.781  | 616.03 | 609.55 | 6112.87 | 476.85 | .135 | 316.69 | 8064.83  | 7028.27 | 108.93 | .12 | .3639 | 17.421 | .0000 | .000  |
| 899.781  | 615.42 | 609.13 | 6113.13 | 469.80 | .133 | 321.14 | 8320.48  | 7130.59 | 110.44 | .12 | .3638 | 17.428 | .0000 | .000  |
| 914.781  | 614.85 | 608.73 | 6113.36 | 463.52 | .131 | 325.60 | 8571.23  | 7250.43 | 111.96 | .12 | .3637 | 17.434 | .0000 | .000  |
| 929.781  | 614.31 | 608.34 | 6113.57 | 457.95 | .130 | 330.05 | 8817.09  | 7363.78 | 113.47 | .12 | .3636 | 17.438 | .0000 | .000  |
| 944.781  | 613.83 | 607.96 | 6113.74 | 453.01 | .128 | 334.50 | 9058.07  | 7478.64 | 114.99 | .12 | .3636 | 17.442 | .0000 | .000  |
| 959.781  | 613.32 | 607.60 | 6113.90 | 448.66 | .127 | 338.95 | 9294.15  | 7595.02 | 116.50 | .12 | .3635 | 17.444 | .0000 | .000  |
| 974.781  | 612.86 | 607.24 | 6114.03 | 444.84 | .126 | 343.40 | 9525.34  | 7712.92 | 118.02 | .12 | .3634 | 17.447 | .0000 | .000  |
| 989.781  | 612.41 | 606.88 | 6114.15 | 441.51 | .125 | 347.85 | 9751.65  | 7832.33 | 119.53 | .12 | .3633 | 17.448 | .0000 | .000  |
| 1004.781 | 611.99 | 606.54 | 6114.25 | 438.63 | .124 | 352.30 | 9973.06  | 7953.28 | 121.05 | .12 | .3633 | 17.449 | .0000 | .000  |
| 1019.781 | 611.59 | 606.19 | 6114.33 | 436.17 | .124 | 356.75 | 10189.58 | 8075.70 | 122.56 | .12 | .3632 | 17.450 | .0000 | .000  |
| 1034.781 | 611.20 | 605.86 | 6114.40 | 434.10 | .123 | 361.20 | 10401.22 | 8199.67 | 124.08 | .11 | .3631 | 17.450 | .0000 | .000  |
| 1049.791 | 611.05 | 605.73 | 6114.43 | 433.37 | .123 | 362.98 | 10488.64 | 8249.76 | 50.13  | .04 | .3631 | 17.450 | .0000 | .000  |
| 1055.791 | 610.70 | 605.40 | 6114.44 | 432.97 | .123 | 365.92 | 10660.08 | 8375.57 | 125.93 | .11 | .3630 | 17.448 | .0000 | .000  |
| 1070.791 | 610.37 | 605.07 | 6114.44 | 432.80 | .123 | 368.86 | 10831.61 | 8502.39 | 126.93 | .11 | .3630 | 17.445 | .0000 | .000  |
| 1084.171 | 610.08 | 604.74 | 6114.44 | 432.83 | .123 | 371.48 | 10981.50 | 8616.34 | 114.05 | .10 | .3629 | 17.443 | .0000 | .000  |
| AFT(A)   | 603.38 | 577.70 | 6080.60 | 965.11 | .274 | .....  | 14435.43 | 9084.37 | 283.22 | .24 | .3627 | 17.458 | ..... | ..... |
| AFT(B)   | 603.40 | 603.40 | 6115.79 | -11.35 | .603 | .....  | 9024.82  | 185.05  | 185.18 | .14 | .3625 | 17.476 | ..... | ..... |



IGNITION TIME, TIME (S)

49.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|--------------------------------------------|----------------------|---------------|---------------|
| MOTOR PARAMETERS:                          |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9708735.1     | 2200595.2     |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10235831.     | 2301106.4     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 29356.706     | 6599.6501     |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT1               | 57643670+09   | 012963309+09  |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.43375     | 257.43375     |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT1               | 61818055+09   | 013897252+09  |
| THRUST COEFFICIENT                         | CF                   | 1.6247922     | 1.6247922     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4038.7411     | 8903.8999     |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 242004.25     | 535291.73     |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 15.755531     | 34.735001     |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1727.3064     | 3808.0508     |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 250.20672     | 387821.19     |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 150.61498     | 9191090.1     |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 263121.24     | 580083.05     |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 880.59032     | 1941.3694     |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597290     | 1.1597290     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.840314     | 28.325604     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.3567     | 5115.9996     |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | 0.13184281    | 0.13184281    |
| HEAD END PARAMETERS:                       |                      |               |               |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 0.41988130+09 | 608.98635     |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | 0.26750140+11 | 38809.412     |
| BURN AREA (M**2,IN**2)                     | AHH                  | 13.288744     | 20597.595     |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | 0.92431016+02 | 0.36390164    |
| DISTANCE BURNED (M,IN)                     | TAU2(1)              | 0.49112035    | 19.335447     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 4.4063094     | 268889.50     |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 50.697522     | 3093752.6     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3398.9227     | 6118.0608     |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |               |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 225.18343     | 349035.02     |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | 0.0000000     | 0.0000000     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 145.19283     | 8860210.0     |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 145.25082     | 8863748.7     |
| AFT END PARAMETERS:                        |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 0.40672703+09 | 589.90768     |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | 0.24873877+11 | 36076.509     |
| BURN AREA (M**2,IN**2)                     | AAN                  | 11.734548     | 18188.586     |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(1+1,1)           | 0.91398961+02 | 0.35983843    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(1+2,1)           | 0.91355181+02 | 0.35966607    |
| DISTANCE BURNED, REGION A (M,IN)           | TAU2(1+1,1)          | 0.48219502    | 18.905316     |
| DISTANCE BURNED, REGION B (M,IN)           | TAU2(1+2,1)          | 0.48064215    | 18.922920     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 1.0150462     | 61990.740     |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 16.033583     | 978429.27     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(1+2,3)          | 3396.0417     | 6112.8750     |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 9.7157128     | 15059.385     |
| NOZZLE PARAMETERS:                         |                      |               |               |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5488959     | 2400.7935     |
| EXPANSION RATIO                            | EPR                  | 6.9394689     | 6.9394689     |
| PRESSURE RATIO                             | PEPO                 | 0.22521357-01 | 0.22521357-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | 0.37810250-01 | 0.37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000003     | 2.0000000     |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | INCHES   | SQ. IN. | WDOT   | DWDOT  | DW/DT  | RB     | TAU   | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|-------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      |        |          |         | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.   | IN/SEC | IN.   |
| FORE                        |        |        |         |        |      |        |          |         |        |        |        |        |       |        |       |
| 15.000                      | 608.99 | 608.91 | 6118.06 | 36.06  | .010 | 298.81 | 7251.68  | 476.86  | 475.31 | 1.55   | .3637  | 19.335 | .0000 | .0000  | .0000 |
| 30.000                      | 608.93 | 608.88 | 6118.04 | 43.80  | .012 | 299.48 | 7264.81  | 540.25  | 103.54 | .15    | .3637  | 19.303 | .0000 | .0000  | .0000 |
| 45.000                      | 608.92 | 608.84 | 6118.01 | 51.53  | .015 | 300.14 | 7277.92  | 683.88  | 103.77 | .15    | .3637  | 19.299 | .0000 | .0000  | .0000 |
| 60.000                      | 608.90 | 608.80 | 6117.97 | 59.25  | .017 | 300.81 | 7291.03  | 787.73  | 104.00 | .15    | .3637  | 19.296 | .0000 | .0000  | .0000 |
| 75.000                      | 608.87 | 608.74 | 6117.94 | 66.97  | .019 | 301.47 | 7304.13  | 891.81  | 104.23 | .15    | .3637  | 19.290 | .0000 | .0000  | .0000 |
| 90.000                      | 608.84 | 608.68 | 6117.89 | 74.67  | .021 | 302.14 | 7317.23  | 996.12  | 104.46 | .15    | .3636  | 19.285 | .0000 | .0000  | .0000 |
| 105.000                     | 608.81 | 608.62 | 6117.85 | 82.37  | .023 | 302.80 | 7330.32  | 1100.66 | 104.68 | .15    | .3636  | 19.281 | .0000 | .0000  | .0000 |
| 116.761                     | 608.77 | 608.54 | 6117.79 | 90.06  | .026 | 303.47 | 7343.40  | 1205.42 | 104.91 | .15    | .3636  | 19.276 | .0000 | .0000  | .0000 |
|                             | 608.74 | 608.48 | 6117.75 | 96.08  | .027 | 303.99 | 7353.66  | 1287.71 | 82.41  | .12    | .3636  | 19.271 | .0000 | .0000  | .0000 |
| 116.771                     | 608.74 | 608.50 | 6117.77 | 92.97  | .026 | 294.77 | 7600.05  | 1287.71 | .00    | .00    | .3636  | 19.272 | .0000 | .0000  | .0000 |
| 131.771                     | 608.42 | 608.42 | 6117.70 | 102.53 | .029 | 299.41 | 7441.35  | 1390.38 | 102.81 | .14    | .3636  | 19.272 | .0000 | .0000  | .0000 |
| 143.719                     | 608.35 | 608.35 | 6117.63 | 110.67 | .031 | 303.17 | 7312.67  | 1474.70 | 84.44  | .12    | .3636  | 19.265 | .0000 | .0000  | .0000 |
| 155.719                     | 608.25 | 608.25 | 6117.57 | 117.97 | .033 | 304.10 | 7349.37  | 1579.61 | 105.07 | .15    | .3636  | 19.260 | .0000 | .0000  | .0000 |
| 173.719                     | 608.14 | 608.14 | 6117.50 | 125.23 | .035 | 305.04 | 7385.97  | 1694.85 | 105.38 | .15    | .3635  | 19.255 | .0000 | .0000  | .0000 |
| 188.719                     | 608.03 | 608.03 | 6117.42 | 132.44 | .038 | 305.97 | 7422.50  | 1790.40 | 105.70 | .15    | .3635  | 19.249 | .0000 | .0000  | .0000 |
| 203.719                     | 607.91 | 607.91 | 6117.35 | 139.62 | .040 | 306.90 | 7458.94  | 1896.26 | 106.02 | .15    | .3635  | 19.244 | .0000 | .0000  | .0000 |
| 218.719                     | 607.79 | 607.79 | 6117.27 | 146.75 | .042 | 307.83 | 7495.30  | 2002.44 | 106.33 | .15    | .3635  | 19.239 | .0000 | .0000  | .0000 |
| 233.719                     | 607.66 | 607.66 | 6117.18 | 153.84 | .044 | 308.76 | 7531.58  | 2108.93 | 106.65 | .15    | .3634  | 19.233 | .0000 | .0000  | .0000 |
| 248.719                     | 607.52 | 607.52 | 6117.10 | 160.89 | .046 | 309.69 | 7567.77  | 2215.74 | 106.96 | .15    | .3634  | 19.227 | .0000 | .0000  | .0000 |
| 263.719                     | 607.38 | 607.38 | 6117.01 | 167.90 | .048 | 310.63 | 7603.09  | 2322.86 | 107.27 | .15    | .3634  | 19.222 | .0000 | .0000  | .0000 |
| 278.719                     | 607.23 | 607.23 | 6116.91 | 174.88 | .050 | 311.56 | 7639.92  | 2430.30 | 107.59 | .15    | .3634  | 19.216 | .0000 | .0000  | .0000 |
| 293.719                     | 607.08 | 607.08 | 6116.82 | 181.82 | .052 | 312.49 | 7675.86  | 2538.05 | 107.90 | .15    | .3633  | 19.210 | .0000 | .0000  | .0000 |
| 308.719                     | 606.92 | 606.92 | 6116.71 | 188.73 | .053 | 313.42 | 7711.73  | 2646.11 | 108.21 | .15    | .3633  | 19.204 | .0000 | .0000  | .0000 |
| 323.719                     | 606.75 | 606.75 | 6116.61 | 195.60 | .055 | 314.35 | 7747.51  | 2754.48 | 108.53 | .15    | .3633  | 19.199 | .0000 | .0000  | .0000 |
| 338.719                     | 606.58 | 606.58 | 6116.50 | 202.44 | .057 | 315.28 | 7783.21  | 2863.16 | 108.84 | .15    | .3632  | 19.193 | .0000 | .0000  | .0000 |
| 353.719                     | 606.44 | 606.44 | 6116.39 | 209.24 | .059 | 316.22 | 7818.82  | 2972.16 | 109.15 | .16    | .3632  | 19.187 | .0000 | .0000  | .0000 |
| 368.719                     | 606.22 | 606.22 | 6116.28 | 216.02 | .061 | 317.15 | 7854.35  | 3081.47 | 109.46 | .16    | .3632  | 19.181 | .0000 | .0000  | .0000 |
| 383.719                     | 606.03 | 606.03 | 6116.17 | 222.76 | .063 | 318.08 | 7889.81  | 3191.06 | 109.77 | .16    | .3631  | 19.174 | .0000 | .0000  | .0000 |
| 398.719                     | 605.84 | 605.84 | 6116.05 | 229.48 | .065 | 319.01 | 7925.17  | 3301.01 | 110.08 | .16    | .3631  | 19.168 | .0000 | .0000  | .0000 |
| 403.048                     | 605.79 | 605.79 | 6116.01 | 231.32 | .066 | 319.27 | 7934.89  | 3331.32 | 30.36  | .04    | .3630  | 19.162 | .0000 | .0000  | .0000 |
| 418.048                     | 605.59 | 605.59 | 6115.88 | 238.53 | .068 | 317.41 | 7951.20  | 3441.16 | 109.99 | .16    | .3630  | 19.150 | .0000 | .0000  | .0000 |
| 427.051                     | 605.46 | 605.46 | 6115.80 | 242.82 | .069 | 316.30 | 7961.24  | 3506.77 | 65.70  | .09    | .3630  | 19.155 | .0000 | .0000  | .0000 |
| 427.061                     | 606.11 | 606.11 | 6116.87 | 177.85 | .050 | 439.11 | 10859.52 | 3506.77 | .00    | .00    | .3631  | 19.178 | .0000 | .0000  | .0000 |
| 442.061                     | 605.97 | 605.97 | 6116.32 | 213.62 | .061 | 382.21 | 9407.89  | 3648.48 | 141.91 | .20    | .3631  | 19.178 | .0000 | .0000  | .0000 |
| 457.061                     | 605.15 | 605.15 | 6115.39 | 263.41 | .075 | 325.30 | 7894.44  | 3770.54 | 122.24 | .18    | .3631  | 19.151 | .0000 | .0000  | .0000 |
| 478.204                     | 605.05 | 605.05 | 6114.81 | 249.94 | .082 | 302.60 | 7256.70  | 3814.86 | 44.38  | .06    | .3629  | 19.111 | .0000 | .0000  | .0000 |
| 493.204                     | 604.79 | 604.79 | 6114.66 | 296.80 | .084 | 302.59 | 7285.83  | 3919.11 | 104.40 | .15    | .3629  | 19.091 | .0000 | .0000  | .0000 |
| 508.204                     | 604.53 | 604.53 | 6114.50 | 303.63 | .086 | 303.17 | 7314.83  | 4023.55 | 104.60 | .15    | .3628  | 19.083 | .0000 | .0000  | .0000 |
| 523.204                     | 604.25 | 604.25 | 6114.33 | 310.43 | .088 | 303.76 | 7343.79  | 4128.18 | 104.78 | .15    | .3628  | 19.075 | .0000 | .0000  | .0000 |
| 538.204                     | 603.98 | 603.98 | 6114.17 | 317.20 | .090 | 304.34 | 7372.73  | 4233.00 | 104.97 | .15    | .3627  | 19.067 | .0000 | .0000  | .0000 |
| 553.204                     | 603.69 | 603.69 | 6114.00 | 323.94 | .092 | 304.93 | 7401.58  | 4338.00 | 105.15 | .15    | .3626  | 19.059 | .0000 | .0000  | .0000 |
| 568.204                     | 603.40 | 603.40 | 6113.82 | 330.66 | .094 | 305.51 | 7430.40  | 4443.18 | 105.34 | .15    | .3626  | 19.051 | .0000 | .0000  | .0000 |
| 583.204                     | 603.11 | 603.11 | 6113.65 | 337.35 | .096 | 306.10 | 7459.19  | 4548.55 | 105.52 | .15    | .3625  | 19.043 | .0000 | .0000  | .0000 |
| 598.204                     | 602.81 | 602.81 | 6113.47 | 344.01 | .097 | 306.69 | 7487.93  | 4654.10 | 105.71 | .15    | .3625  | 19.034 | .0000 | .0000  | .0000 |
| 613.204                     | 602.50 | 602.50 | 6113.29 | 350.65 | .099 | 307.27 | 7516.73  | 4759.84 | 105.89 | .15    | .3624  | 19.026 | .0000 | .0000  | .0000 |
| 628.204                     | 602.19 | 602.19 | 6113.11 | 357.27 | .101 | 307.86 | 7545.28  | 4865.76 | 106.07 | .15    | .3623  | 19.017 | .0000 | .0000  | .0000 |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|
| 624.204  | 605.60 | 601.88 | 6112.92 | 363.86 | .103 | 308.44 | 7573.89  | 4971.86 | 106.26 | .15 | .3623 | 19.009 | .000  |
| 643.204  | 605.41 | 601.55 | 6112.73 | 370.43 | .105 | 309.63 | 7622.46  | 5078.15 | 106.44 | .15 | .3622 | 19.000 | .000  |
| 658.204  | 605.22 | 601.23 | 6112.54 | 376.97 | .107 | 309.61 | 7630.98  | 5184.62 | 106.62 | .15 | .3621 | 18.992 | .000  |
| 673.204  | 605.02 | 600.89 | 6112.34 | 383.50 | .109 | 310.20 | 7639.46  | 5291.27 | 106.80 | .15 | .3621 | 18.983 | .000  |
| 688.204  | 604.83 | 600.56 | 6112.15 | 390.00 | .111 | 310.79 | 7687.90  | 5398.10 | 106.98 | .15 | .3620 | 18.975 | .000  |
| 703.204  | 604.62 | 600.22 | 6111.95 | 396.48 | .112 | 311.37 | 7716.29  | 5505.11 | 107.17 | .15 | .3619 | 18.966 | .000  |
| 718.204  | 604.42 | 599.87 | 6111.74 | 402.94 | .114 | 311.96 | 7744.64  | 5612.30 | 107.35 | .15 | .3619 | 18.958 | .000  |
| 726.191  | 604.31 | 599.68 | 6111.64 | 409.37 | .115 | 312.27 | 7759.72  | 5669.45 | 57.23  | .08 | .3618 | 18.949 | .000  |
| 741.191  | 604.01 | 599.32 | 6111.55 | 429.08 | .116 | 314.26 | 7859.42  | 5777.15 | 107.86 | .16 | .3617 | 18.944 | .000  |
| 746.336  | 603.91 | 599.20 | 6111.52 | 410.01 | .116 | 314.95 | 7893.50  | 5814.24 | 37.15  | .05 | .3617 | 18.941 | .000  |
| 746.346  | 603.62 | 600.86 | 6114.20 | 315.73 | .090 | 416.42 | 10226.65 | 5814.24 | .00    | .00 | .3620 | 18.981 | .000  |
| 761.346  | 603.01 | 600.60 | 6113.34 | 348.87 | .099 | 384.42 | 9477.21  | 5952.00 | 137.95 | .20 | .3620 | 18.982 | .000  |
| 776.346  | 603.83 | 599.62 | 6112.22 | 387.57 | .110 | 352.41 | 8725.11  | 6078.73 | 126.92 | .18 | .3619 | 18.958 | .000  |
| 791.346  | 603.63 | 599.38 | 6112.75 | 433.15 | .123 | 320.41 | 7970.34  | 6194.42 | 115.85 | .17 | .3617 | 18.932 | .000  |
| 794.831  | 603.83 | 598.29 | 6112.35 | 444.76 | .126 | 312.97 | 7794.61  | 6219.70 | 25.32  | .04 | .3615 | 18.901 | .000  |
| 809.831  | 603.56 | 597.90 | 6110.17 | 449.86 | .128 | 313.96 | 7844.45  | 6327.39 | 107.84 | .16 | .3614 | 18.896 | .000  |
| 824.831  | 603.29 | 597.51 | 6109.99 | 454.95 | .129 | 314.95 | 7894.13  | 6435.39 | 108.16 | .16 | .3614 | 18.888 | .000  |
| 839.831  | 603.02 | 597.11 | 6109.81 | 460.01 | .130 | 315.94 | 7943.65  | 6543.71 | 108.48 | .16 | .3613 | 18.881 | .000  |
| 854.781  | 602.75 | 596.71 | 6109.63 | 465.04 | .132 | 316.92 | 7992.84  | 6651.99 | 108.43 | .16 | .3612 | 18.873 | .000  |
| 869.781  | 602.14 | 596.31 | 6109.91 | 457.25 | .130 | 321.37 | 8268.84  | 6761.53 | 109.70 | .16 | .3611 | 18.866 | .000  |
| 884.781  | 601.58 | 595.92 | 6110.16 | 453.36 | .128 | 325.82 | 8539.21  | 6872.57 | 111.20 | .16 | .3610 | 18.874 | .000  |
| 899.781  | 601.04 | 595.54 | 6110.37 | 444.26 | .126 | 330.27 | 8803.94  | 6985.12 | 112.71 | .16 | .3609 | 18.881 | .000  |
| 914.781  | 600.54 | 595.18 | 6110.56 | 438.89 | .124 | 334.72 | 9063.05  | 7099.16 | 114.21 | .16 | .3609 | 18.886 | .000  |
| 929.781  | 600.07 | 594.82 | 6110.72 | 434.17 | .123 | 339.17 | 9316.52  | 7214.71 | 115.71 | .17 | .3608 | 18.890 | .000  |
| 944.781  | 599.62 | 594.48 | 6110.86 | 430.04 | .122 | 343.61 | 9564.36  | 7331.76 | 117.22 | .17 | .3607 | 18.893 | .000  |
| 959.781  | 599.20 | 594.14 | 6110.98 | 426.45 | .121 | 348.06 | 9806.57  | 7450.31 | 118.72 | .17 | .3606 | 18.895 | .000  |
| 974.781  | 598.79 | 593.81 | 6111.08 | 423.36 | .120 | 352.51 | 10043.14 | 7570.37 | 120.22 | .17 | .3605 | 18.899 | .000  |
| 989.781  | 598.40 | 593.49 | 6111.17 | 420.72 | .119 | 356.96 | 10274.09 | 7691.92 | 121.73 | .17 | .3604 | 18.899 | .000  |
| 1004.781 | 598.03 | 593.17 | 6111.24 | 418.51 | .119 | 361.41 | 10499.40 | 7814.99 | 123.23 | .17 | .3604 | 18.899 | .000  |
| 1019.781 | 597.67 | 592.86 | 6111.30 | 416.69 | .118 | 365.86 | 10719.08 | 7939.55 | 124.73 | .17 | .3603 | 18.900 | .000  |
| 1034.781 | 597.32 | 592.55 | 6111.35 | 415.24 | .118 | 370.30 | 10933.13 | 8065.62 | 126.24 | .17 | .3603 | 18.900 | .000  |
| 1049.781 | 597.19 | 592.42 | 6111.37 | 414.76 | .118 | 372.09 | 11017.31 | 8116.55 | 51.00  | .07 | .3602 | 18.899 | .000  |
| 1055.791 | 596.88 | 592.12 | 6111.37 | 414.73 | .118 | 375.02 | 11197.39 | 8244.46 | 128.07 | .17 | .3602 | 18.897 | .000  |
| 1070.791 | 596.58 | 591.82 | 6111.36 | 414.92 | .118 | 377.96 | 11373.06 | 8373.35 | 129.06 | .17 | .3601 | 18.894 | .000  |
| 1085.791 | 596.32 | 591.55 | 6111.35 | 415.26 | .118 | 380.58 | 11526.03 | 8489.15 | 119.95 | .15 | .3601 | 18.891 | .000  |
| AF1(A)   | 589.91 | 584.69 | 6076.71 | 967.18 | .275 | .....  | 15059.39 | 8903.90 | 286.38 | .36 | .3598 | 18.905 | ..... |
| AF1(B)   | 589.93 | 589.93 | 6112.87 | -7.55  | .002 | .....  | 7648.78  | 128.73  | 128.84 | .11 | .3597 | 18.923 | ..... |







| IGNITION TIME, TIME (S)                    | 53.000000            |               |              |
|--------------------------------------------|----------------------|---------------|--------------|
| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NONENCLATURE | INTERNATIONAL | ENGLISH      |
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9912568.2     | 2228434.0    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10292744.     | 2313901.0    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 29456.935     | 6622.1824    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT                | .61595978+09  | .13847327+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.29033     | 257.29033    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT                | .65915662+09  | .14818430+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6244701     | 1.6244701    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4063.5039     | 8958.4926    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 258984.40     | 570962.87    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MI                   | 15.809323     | 34.853592    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1664.3208     | 3669.1992    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 251.97637     | 390564.15    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 141.37909     | 8627481.5    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 246907.91     | 544338.77    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 920.64462     | 2029.6740    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597293     | 1.1597293    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.848377     | 28.325822    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.3955     | 5116.1270    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .12614129     | .12614129    |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .42011317+09  | 609.32264    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .28435197+11  | 41241.767    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 11.401927     | 17673.023    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .92450276+02  | .36397747    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .52807210     | 20.790240    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 3.9652807     | 241976.27    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 51.138551     | 3120665.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3398.9767     | 6118.1500    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 231.54725     | 358898.95    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 136.75770     | 8345467.1    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 153.68624     | 9378509.9    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .40820390+09  | 592.04971    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .26500526+11  | 38435.764    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 9.0271990     | 13992.187    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NT+1,1)          | .91515224+02  | .36029616    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NT+2,1)          | .91467729+02  | .36010917    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NT+1,1)         | .51674112     | 20.344139    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NT+2,1)         | .51717024     | 20.361033    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .65610832     | 40038.186    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 16.393321     | 1000381.8    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NT+2,3)         | 3396.9109     | 6113.5397    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.121631     | 15680.560    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5521808     | 2405.8850    |
| EXPANSION RATIO                            | EPR                  | 6.9247830     | 6.9247830    |
| PRESSURE RATIO                             | PEPO                 | .22584047-01  | .22584047-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37819250-01  | .37819250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.3000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | LB/SEC | LB/SEC | DW/DT  | RB     | TAU   | IN/SEC | IN/SEC | IN.   |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|--------|--------|-------|
| PSIA                        | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | LB/SEC |        | IN/SEC | IN.   | IN/SEC | IN.    |       |
| FUNE                        | 609.32 | 609.28 | 6118.16 | 28.91  | .008 | 311.06 | 7696.18  | 406.01  | 407.90 | 1.90   | .3638  | 20.790 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 15-000                      | 609.29 | 609.25 | 6118.14 | 36.50  | .010 | 311.33 | 7709.83  | 513.45  | 107.74 | .29    | .3638  | 20.757 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 30-000                      | 609.27 | 609.22 | 6118.11 | 44.07  | .012 | 311.59 | 7723.47  | 620.99  | 107.83 | .29    | .3638  | 20.753 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 45-000                      | 609.26 | 609.18 | 6118.09 | 51.62  | .015 | 311.86 | 7737.10  | 728.62  | 107.92 | .29    | .3637  | 20.748 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 60-000                      | 609.23 | 609.14 | 6118.05 | 59.15  | .017 | 312.12 | 7750.72  | 836.34  | 108.01 | .29    | .3637  | 20.744 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 75-000                      | 609.21 | 609.04 | 6118.02 | 66.66  | .019 | 312.38 | 7764.33  | 944.14  | 108.10 | .29    | .3637  | 20.739 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 90-000                      | 609.18 | 609.03 | 6117.98 | 74.15  | .021 | 312.65 | 7777.93  | 1052.04 | 108.18 | .29    | .3637  | 20.734 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 105-000                     | 609.15 | 608.96 | 6117.93 | 81.63  | .023 | 312.91 | 7791.53  | 1160.02 | 108.27 | .29    | .3637  | 20.730 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 116-761                     | 609.12 | 608.91 | 6117.89 | 87.48  | .025 | 313.12 | 7802.18  | 1244.75 | 84.95  | .23    | .3637  | 20.725 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 116-771                     | 609.12 | 608.92 | 6117.91 | 84.97  | .024 | 300.44 | 8032.00  | 1244.75 | .00    | .00    | .3637  | 20.726 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 131-771                     | 609.10 | 608.85 | 6117.85 | 93.90  | .027 | 306.99 | 7881.78  | 1349.59 | 105.13 | .28    | .3637  | 20.726 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 143-919                     | 609.08 | 608.79 | 6117.79 | 101.50 | .029 | 312.29 | 7759.98  | 1436.15 | 86.80  | .23    | .3637  | 20.719 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 158-919                     | 609.03 | 608.70 | 6117.73 | 108.61 | .031 | 313.22 | 7798.09  | 1544.11 | 108.25 | .29    | .3637  | 20.713 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 173-919                     | 608.98 | 608.60 | 6117.67 | 115.68 | .033 | 314.16 | 7836.10  | 1652.38 | 108.57 | .29    | .3636  | 20.708 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 188-919                     | 608.93 | 608.50 | 6117.60 | 122.71 | .035 | 315.09 | 7874.02  | 1760.98 | 108.86 | .29    | .3636  | 20.703 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 203-919                     | 608.87 | 608.40 | 6117.53 | 129.69 | .037 | 316.02 | 7911.84  | 1869.88 | 109.20 | .29    | .3636  | 20.697 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 218-919                     | 608.81 | 608.29 | 6117.46 | 136.64 | .039 | 316.95 | 7949.57  | 1979.11 | 109.52 | .29    | .3636  | 20.692 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 233-919                     | 608.75 | 608.17 | 6117.38 | 143.55 | .041 | 317.08 | 7987.20  | 2088.64 | 109.83 | .30    | .3635  | 20.686 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 248-919                     | 608.69 | 608.04 | 6117.30 | 150.42 | .043 | 318.81 | 8024.73  | 2198.49 | 110.15 | .30    | .3635  | 20.680 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 263-919                     | 608.62 | 607.92 | 6117.22 | 157.26 | .045 | 319.75 | 8062.18  | 2308.66 | 110.46 | .30    | .3635  | 20.675 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 278-919                     | 608.54 | 607.78 | 6117.14 | 164.06 | .046 | 320.68 | 8099.52  | 2419.13 | 110.78 | .30    | .3635  | 20.669 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 293-919                     | 608.47 | 607.64 | 6117.05 | 170.82 | .048 | 321.61 | 8136.77  | 2529.92 | 111.09 | .30    | .3634  | 20.663 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 308-919                     | 608.39 | 607.50 | 6116.95 | 177.55 | .050 | 322.54 | 8173.92  | 2641.03 | 111.40 | .30    | .3634  | 20.657 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 323-919                     | 608.30 | 607.34 | 6116.86 | 184.25 | .052 | 323.47 | 8210.98  | 2752.44 | 111.72 | .30    | .3634  | 20.651 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 338-919                     | 608.22 | 607.19 | 6116.76 | 190.92 | .054 | 324.40 | 8247.95  | 2864.17 | 112.03 | .30    | .3634  | 20.645 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 353-919                     | 608.13 | 607.03 | 6116.66 | 197.55 | .056 | 325.33 | 8284.81  | 2976.21 | 112.34 | .30    | .3633  | 20.639 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 368-919                     | 608.04 | 606.86 | 6116.56 | 204.15 | .058 | 326.27 | 8321.57  | 3088.56 | 112.65 | .30    | .3633  | 20.632 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 383-919                     | 607.94 | 606.60 | 6116.45 | 210.73 | .060 | 327.20 | 8358.26  | 3201.21 | 112.96 | .31    | .3633  | 20.626 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 398-919                     | 607.84 | 606.51 | 6116.34 | 217.27 | .062 | 328.13 | 8394.85  | 3314.18 | 113.28 | .31    | .3632  | 20.620 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 403-048                     | 607.81 | 606.46 | 6116.31 | 219.07 | .062 | 328.39 | 8404.90  | 3345.33 | 31.23  | .08    | .3632  | 20.613 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 418-048                     | 607.72 | 606.27 | 6116.18 | 226.16 | .064 | 328.53 | 8418.47  | 3458.21 | 113.18 | .31    | .3632  | 20.612 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 427-051                     | 607.66 | 606.16 | 6116.11 | 233.38 | .065 | 329.41 | 8426.87  | 3525.65 | 67.62  | .18    | .3631  | 20.606 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 427-061                     | 607.55 | 606.75 | 6117.08 | 168.66 | .048 | 444.86 | 11501.14 | 3525.65 | .00    | .00    | .3632  | 20.630 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 442-061                     | 607.77 | 606.61 | 6116.58 | 202.51 | .057 | 389.35 | 9970.87  | 3669.45 | 144.19 | .39    | .3632  | 20.630 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 457-061                     | 608.21 | 606.46 | 6115.75 | 249.34 | .071 | 333.84 | 8374.44  | 3794.11 | 125.00 | .34    | .3632  | 20.602 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 463-204                     | 608.50 | 606.37 | 6115.24 | 274.39 | .078 | 311.11 | 7701.56  | 3839.63 | 45.65  | .13    | .3632  | 20.562 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 478-204                     | 608.36 | 606.13 | 6115.09 | 281.08 | .080 | 311.70 | 7731.46  | 3946.96 | 107.63 | .30    | .3631  | 20.542 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 493-204                     | 608.23 | 605.89 | 6114.94 | 287.73 | .082 | 312.28 | 7761.30  | 4054.49 | 107.82 | .30    | .3631  | 20.534 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 508-204                     | 608.08 | 605.64 | 6114.79 | 294.36 | .083 | 312.87 | 7791.09  | 4162.20 | 108.01 | .30    | .3630  | 20.525 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 523-204                     | 607.94 | 605.38 | 6114.64 | 300.97 | .085 | 313.45 | 7820.83  | 4270.10 | 108.20 | .30    | .3630  | 20.517 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 538-204                     | 607.79 | 605.12 | 6114.48 | 307.54 | .087 | 314.03 | 7850.53  | 4378.18 | 108.38 | .30    | .3629  | 20.509 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 553-204                     | 607.64 | 604.85 | 6114.32 | 314.09 | .089 | 314.62 | 7880.14  | 4486.45 | 108.57 | .30    | .3629  | 20.500 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 568-204                     | 607.48 | 604.58 | 6114.16 | 320.62 | .091 | 315.20 | 7909.71  | 4594.90 | 108.75 | .30    | .3628  | 20.492 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 583-204                     | 607.32 | 604.32 | 6113.99 | 327.12 | .093 | 315.79 | 7939.24  | 4703.54 | 108.94 | .30    | .3628  | 20.483 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 598-204                     | 607.16 | 604.02 | 6113.83 | 333.60 | .095 | 316.37 | 7968.71  | 4812.36 | 109.12 | .30    | .3627  | 20.475 | .0000  | .0000 | .0000  | .0000  | .0000 |
| 613-204                     | 606.99 | 603.73 | 6113.66 | 340.55 | .096 | 316.95 | 7998.12  | 4921.36 | 109.31 | .30    | .3627  | 20.466 | .0000  | .0000 | .0000  | .0000  | .0000 |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 628.204  | 606.82 | 603.44 | 6113.48 | 346.48 | .098 | 317.54 | 8027.49  | 5030.54 | 109.49 | .30 | .3626 | 20.457 | .0000 | .000  |
| 643.204  | 606.65 | 603.14 | 6113.31 | 352.89 | .100 | 318.12 | 8058.80  | 5139.91 | 109.67 | .31 | .3625 | 20.448 | .0000 | .000  |
| 658.204  | 606.48 | 602.84 | 6113.13 | 359.28 | .102 | 318.71 | 8086.05  | 5249.46 | 109.86 | .31 | .3625 | 20.439 | .0000 | .000  |
| 673.204  | 606.30 | 602.53 | 6112.95 | 365.64 | .104 | 319.29 | 8115.26  | 5359.20 | 110.04 | .31 | .3624 | 20.431 | .0000 | .000  |
| 688.204  | 606.11 | 602.22 | 6112.76 | 371.99 | .105 | 319.88 | 8144.41  | 5469.11 | 110.22 | .31 | .3623 | 20.422 | .0000 | .000  |
| 703.204  | 605.93 | 601.90 | 6112.58 | 378.31 | .107 | 320.46 | 8173.50  | 5579.21 | 110.40 | .31 | .3623 | 20.413 | .0000 | .000  |
| 718.204  | 605.74 | 601.58 | 6112.39 | 384.62 | .109 | 321.04 | 8202.55  | 5689.48 | 110.58 | .31 | .3622 | 20.404 | .0000 | .000  |
| 725.191  | 605.64 | 601.41 | 6112.29 | 387.97 | .110 | 321.36 | 8217.99  | 5748.27 | 58.95  | .16 | .3621 | 20.395 | .0000 | .000  |
| 741.191  | 605.37 | 601.08 | 6112.20 | 390.78 | .111 | 323.35 | 8326.48  | 5859.06 | 111.10 | .31 | .3621 | 20.391 | .0000 | .000  |
| 746.336  | 605.27 | 600.96 | 6112.17 | 391.75 | .111 | 324.03 | 8355.50  | 5897.21 | 38.26  | .11 | .3620 | 20.387 | .0000 | .000  |
| 748.346  | 605.05 | 602.49 | 6114.62 | 301.49 | .085 | 422.46 | 10833.73 | 5897.21 | .00    | .00 | .3623 | 20.429 | .0000 | .000  |
| 761.346  | 605.36 | 602.24 | 6113.84 | 333.19 | .094 | 391.40 | 10030.63 | 6037.15 | 140.33 | .39 | .3623 | 20.429 | .0000 | .000  |
| 776.346  | 605.20 | 601.35 | 6112.82 | 370.19 | .105 | 360.34 | 9240.71  | 6166.39 | 129.61 | .36 | .3623 | 20.406 | .0000 | .000  |
| 791.346  | 605.01 | 600.20 | 6111.48 | 413.80 | .117 | 329.28 | 8439.76  | 6284.92 | 118.86 | .33 | .3621 | 20.378 | .0000 | .000  |
| 794.831  | 605.19 | 600.12 | 6111.11 | 424.93 | .120 | 322.06 | 8253.51  | 6310.92 | 26.07  | .07 | .3619 | 20.346 | .0000 | .000  |
| 809.831  | 604.95 | 599.76 | 6110.94 | 429.97 | .122 | 323.05 | 8304.73  | 6421.69 | 111.08 | .31 | .3618 | 20.341 | .0000 | .000  |
| 824.831  | 604.70 | 599.40 | 6110.77 | 434.99 | .123 | 324.03 | 8355.76  | 6532.78 | 111.41 | .31 | .3618 | 20.333 | .0000 | .000  |
| 839.831  | 604.46 | 599.03 | 6110.60 | 439.99 | .125 | 325.01 | 8406.61  | 6644.19 | 111.72 | .31 | .3617 | 20.325 | .0000 | .000  |
| 854.781  | 604.21 | 598.66 | 6110.43 | 444.96 | .126 | 325.99 | 8457.09  | 6755.54 | 111.66 | .31 | .3616 | 20.317 | .0000 | .000  |
| 869.781  | 603.65 | 598.28 | 6110.67 | 437.84 | .124 | 330.44 | 8743.67  | 6866.17 | 112.95 | .32 | .3615 | 20.309 | .0000 | .000  |
| 884.781  | 603.13 | 597.92 | 6110.89 | 431.57 | .122 | 334.89 | 9023.07  | 6982.30 | 114.45 | .33 | .3614 | 20.317 | .0000 | .000  |
| 899.781  | 602.65 | 597.57 | 6111.07 | 426.06 | .121 | 339.33 | 9297.69  | 7097.92 | 115.96 | .33 | .3614 | 20.324 | .0000 | .000  |
| 914.781  | 602.19 | 597.23 | 6111.23 | 421.23 | .119 | 343.78 | 9565.13  | 7213.04 | 117.46 | .34 | .3613 | 20.329 | .0000 | .000  |
| 929.781  | 601.76 | 596.90 | 6111.37 | 417.02 | .118 | 348.23 | 9826.18  | 7333.67 | 118.97 | .35 | .3612 | 20.332 | .0000 | .000  |
| 944.781  | 601.35 | 596.58 | 6111.49 | 413.38 | .117 | 352.67 | 10090.85 | 7453.79 | 120.47 | .35 | .3612 | 20.335 | .0000 | .000  |
| 959.781  | 600.95 | 596.26 | 6111.59 | 410.25 | .116 | 357.12 | 10329.15 | 7575.41 | 121.98 | .36 | .3611 | 20.338 | .0000 | .000  |
| 974.781  | 600.58 | 595.95 | 6111.68 | 407.59 | .116 | 361.57 | 10571.06 | 7698.54 | 123.49 | .36 | .3610 | 20.339 | .0000 | .000  |
| 989.781  | 600.23 | 595.65 | 6111.75 | 405.37 | .115 | 366.01 | 10806.59 | 7823.17 | 124.99 | .37 | .3610 | 20.340 | .0000 | .000  |
| 1004.781 | 599.88 | 595.35 | 6111.80 | 403.56 | .114 | 370.46 | 11035.73 | 7949.29 | 126.50 | .37 | .3609 | 20.341 | .0000 | .000  |
| 1019.781 | 599.55 | 595.06 | 6111.85 | 402.13 | .114 | 374.91 | 11258.50 | 8076.92 | 128.00 | .37 | .3608 | 20.341 | .0000 | .000  |
| 1034.781 | 599.24 | 594.76 | 6111.88 | 401.06 | .114 | 379.35 | 11474.89 | 8206.05 | 129.50 | .38 | .3608 | 20.340 | .0000 | .000  |
| 1049.791 | 599.11 | 594.65 | 6111.89 | 400.72 | .114 | 381.13 | 11559.80 | 8258.20 | 52.31  | .15 | .3607 | 20.340 | .0000 | .000  |
| 1055.791 | 598.83 | 594.36 | 6111.89 | 400.86 | .114 | 384.07 | 11744.49 | 8389.16 | 131.34 | .38 | .3607 | 20.338 | .0000 | .000  |
| 1070.791 | 598.55 | 594.08 | 6111.88 | 401.22 | .114 | 387.01 | 11924.26 | 8521.11 | 132.33 | .38 | .3606 | 20.334 | .0000 | .000  |
| 1084.171 | 598.30 | 593.82 | 6111.86 | 401.71 | .114 | 389.63 | 12080.49 | 8639.63 | 118.07 | .34 | .3605 | 20.331 | .0000 | .000  |
| FF1(A)   | 592.05 | 566.63 | 6077.24 | 969.43 | .276 | .....  | 15688.56 | 8958.49 | 287.72 | .84 | .3603 | 20.344 | ....  | ..... |
| FF1(B)   | 592.06 | 592.06 | 6113.54 | -1.75  | .000 | .....  | 10277.95 | 31.99   | 32.14  | .15 | .3601 | 20.361 | ....  | ..... |

DATE 071076

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| SLOT<br>INTERFACE<br>LOCATION<br>IN.   | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU.<br>IN. | WSLOT<br>LB/SEC |           |
|----------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|----------------------|-----------------|-----------|
| FORWARD                                | 1.1676+02  | 6.0912+02 | 6.0891+02   | 6.1179+03   | 4.1465+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000               | 0.0000          | 1.2447+03 |
| AFT                                    | 1.1677+02  | 6.0914+02 | 6.0892+02   | 6.1179+03   | 4.1465+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000               | 0.0000          | 1.2447+03 |
| GAS BUILDUP IN SLOT, DW/DT = 4.7694+05 |            |           |             |             |               |                 |               |              |                      |                 |           |
| FORWARD                                | 4.2705+02  | 6.0766+02 | 6.0616+02   | 6.1161+03   | 1.1850+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 0.0000          | 3.5257+03 |
| AFT                                    | 4.2706+02  | 6.0825+02 | 6.0675+02   | 6.1171+03   | 1.1841+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 0.0000          | 3.5257+03 |
| GAS BUILDUP IN SLOT, DW/DT = 4.9334+05 |            |           |             |             |               |                 |               |              |                      |                 |           |
| FORWARD                                | 7.4634+02  | 6.0527+02 | 6.0696+02   | 6.1122+03   | 1.9980+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 0.0000          | 5.8972+03 |
| AFT                                    | 7.4635+02  | 6.0681+02 | 6.0249+02   | 6.1146+03   | 1.9937+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000               | 0.0000          | 5.8972+03 |
| GAS BUILDUP IN SLOT, DW/DT = 6.5057+05 |            |           |             |             |               |                 |               |              |                      |                 |           |

IGNITION TIME, TIME (S)

57.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10060605.     | 2261732.0    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 13380018.     | 2333520.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 30348.781     | 6822.6774    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT1               | .65580602+09  | .14744904+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.25712     | 257.25712    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT1               | .70048346+09  | .15747427+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6242563     | 1.6242563    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4098.1454     | 9034.0640    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 275290.90     | 606930.18    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 16.287971     | 35.908829    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1599.7069     | 3526.7500    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 253.64082     | 393144.06    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 132.04492     | 8057875.6    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 230549.48     | 508274.59    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 963.98949     | 2125.2330    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597317     | 1.1597317    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.848813     | 28.326785    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.4650     | 5116.3549    |
| MAXIMUM CHAMBER MACH NUMBER                | AHPN                 | .12171293     | .12171293    |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .42173146+09  | 611.66977    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .30118404+11  | 43683.052    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 11.013152     | 17070.420    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .92575196-02  | .36446928    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .56506099     | 22.246496    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 3.5505413     | 216667.32    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 51.553290     | 3145974.8    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PKNT(1,3)            | 3399.2863     | 6118.7153    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RAJIAL BURN AREA (M**2,IN**2)              | ABCYL                | 237.80597     | 368600.00    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 128.07783     | 7815788.7    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 162.36639     | 9908204.9    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .41084459+09  | 595.87971    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .28137769+11  | 40810.384    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 4.8216972     | 7473.6456    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(N1+1,1)          | .91718067-02  | .36109476    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1+2,1)          | .91668911-02  | .36090123    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1+1,1)         | .55336089     | 21.785862    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .41655125     | 25419.517    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 16.632878     | 1015000.5    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PKNT(N1+2,3)         | 3397.0692     | 6114.7245    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5554855     | 2411.0674    |
| EXPANSION RATIO                            | EPR                  | 6.9100708     | 6.9100708    |
| PRESSURE RATIO                             | PEPO                 | .22647056-01  | .22647056-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | LD/SEC | IN/SEC | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FUNE                        | 611.67 | 611.63 | 6118.72 | 26.31  | .007 | 320.17 | 8155.52  | 392.95  | 394.53 | 1.57   | .3643  | 22.246 | .0000  | .000  |
| 15.000                      | 611.64 | 611.61 | 6118.70 | 33.66  | .010 | 320.14 | 8169.55  | 503.71  | 111.04 | .29    | .3642  | 22.213 | .0000  | .000  |
| 30.000                      | 611.63 | 611.58 | 6118.68 | 41.00  | .012 | 320.71 | 8183.57  | 614.55  | 111.13 | .29    | .3642  | 22.208 | .0000  | .000  |
| 45.000                      | 611.61 | 611.55 | 6118.65 | 48.32  | .014 | 320.90 | 8197.58  | 725.49  | 111.22 | .29    | .3642  | 22.204 | .0000  | .000  |
| 60.000                      | 611.59 | 611.50 | 6118.62 | 55.63  | .016 | 321.24 | 8211.58  | 836.51  | 111.32 | .29    | .3642  | 22.199 | .0000  | .000  |
| 75.000                      | 611.57 | 611.46 | 6118.59 | 62.91  | .018 | 321.51 | 8225.57  | 947.63  | 111.41 | .29    | .3642  | 22.194 | .0000  | .000  |
| 90.000                      | 611.54 | 611.40 | 6118.55 | 70.18  | .020 | 321.78 | 8239.54  | 1058.84 | 111.50 | .29    | .3642  | 22.190 | .0000  | .000  |
| 105.000                     | 611.52 | 611.35 | 6118.51 | 77.43  | .022 | 322.05 | 8253.51  | 1170.13 | 111.59 | .29    | .3642  | 22.185 | .0000  | .000  |
| 116.761                     | 611.49 | 611.29 | 6118.47 | 83.11  | .024 | 322.26 | 8264.45  | 1257.46 | 87.55  | .23    | .3642  | 22.180 | .0000  | .000  |
| 116.771                     | 611.49 | 611.30 | 6118.48 | 81.05  | .023 | 307.75 | 8474.55  | 1257.46 | .00    | .00    | .3642  | 22.181 | .0000  | .000  |
| 131.771                     | 611.47 | 611.24 | 6118.43 | 89.48  | .025 | 315.29 | 8334.52  | 1365.15 | 107.98 | .28    | .3642  | 22.181 | .0000  | .000  |
| 143.919                     | 611.45 | 611.18 | 6118.38 | 96.64  | .027 | 321.10 | 8220.99  | 1454.28 | 89.36  | .23    | .3642  | 22.174 | .0000  | .000  |
| 158.919                     | 611.40 | 611.10 | 6118.32 | 103.55 | .029 | 322.33 | 8260.53  | 1565.54 | 111.55 | .29    | .3642  | 22.168 | .0000  | .000  |
| 173.919                     | 611.36 | 611.01 | 6118.26 | 110.42 | .031 | 323.26 | 8299.95  | 1677.13 | 111.87 | .29    | .3641  | 22.163 | .0000  | .000  |
| 188.919                     | 611.31 | 610.92 | 6118.20 | 117.25 | .033 | 324.20 | 8339.27  | 1789.02 | 112.19 | .29    | .3641  | 22.157 | .0000  | .000  |
| 203.919                     | 611.26 | 610.82 | 6118.14 | 124.04 | .035 | 325.13 | 8378.47  | 1901.24 | 112.51 | .29    | .3641  | 22.152 | .0000  | .000  |
| 218.919                     | 611.20 | 610.72 | 6118.07 | 130.79 | .037 | 326.06 | 8417.57  | 2013.77 | 112.83 | .29    | .3641  | 22.146 | .0000  | .000  |
| 233.919                     | 611.14 | 610.61 | 6118.00 | 137.50 | .039 | 327.00 | 8456.57  | 2126.62 | 113.14 | .29    | .3641  | 22.141 | .0000  | .000  |
| 248.919                     | 611.08 | 610.49 | 6117.93 | 144.18 | .041 | 327.93 | 8495.45  | 2239.78 | 113.46 | .30    | .3640  | 22.135 | .0000  | .000  |
| 263.919                     | 611.02 | 610.37 | 6117.85 | 150.83 | .043 | 328.86 | 8534.22  | 2353.26 | 113.78 | .30    | .3640  | 22.129 | .0000  | .000  |
| 278.919                     | 610.95 | 610.25 | 6117.77 | 157.44 | .045 | 329.80 | 8572.89  | 2467.06 | 114.09 | .30    | .3640  | 22.123 | .0000  | .000  |
| 293.919                     | 610.88 | 610.11 | 6117.69 | 164.02 | .046 | 330.73 | 8611.45  | 2581.16 | 114.41 | .30    | .3640  | 22.117 | .0000  | .000  |
| 308.919                     | 610.80 | 609.98 | 6117.60 | 170.56 | .048 | 331.66 | 8649.90  | 2695.59 | 114.72 | .30    | .3639  | 22.111 | .0000  | .000  |
| 323.919                     | 610.73 | 609.84 | 6117.51 | 177.08 | .050 | 332.60 | 8688.24  | 2810.32 | 115.04 | .30    | .3639  | 22.105 | .0000  | .000  |
| 338.919                     | 610.65 | 609.69 | 6117.42 | 183.56 | .052 | 333.53 | 8726.47  | 2925.37 | 115.35 | .30    | .3639  | 22.099 | .0000  | .000  |
| 353.919                     | 610.56 | 609.54 | 6117.33 | 190.01 | .054 | 334.46 | 8764.60  | 3040.73 | 115.66 | .30    | .3638  | 22.092 | .0000  | .000  |
| 368.919                     | 610.48 | 609.38 | 6117.23 | 196.44 | .056 | 335.39 | 8802.82  | 3156.41 | 115.98 | .30    | .3638  | 22.086 | .0000  | .000  |
| 383.919                     | 610.39 | 609.22 | 6117.13 | 202.83 | .057 | 336.33 | 8840.52  | 3272.39 | 116.29 | .30    | .3638  | 22.080 | .0000  | .000  |
| 398.919                     | 610.30 | 609.05 | 6117.03 | 209.20 | .059 | 337.26 | 8878.32  | 3388.69 | 116.60 | .30    | .3637  | 22.073 | .0000  | .000  |
| 413.919                     | 610.22 | 609.01 | 6117.00 | 210.95 | .060 | 337.52 | 8886.71  | 3420.76 | 32.15  | .08    | .3637  | 22.067 | .0000  | .000  |
| 428.919                     | 610.18 | 608.83 | 6116.88 | 217.91 | .062 | 338.45 | 8899.54  | 3536.97 | 116.51 | .30    | .3637  | 22.065 | .0000  | .000  |
| 443.919                     | 610.13 | 608.73 | 6116.81 | 222.05 | .063 | 339.38 | 8926.29  | 3606.40 | 69.62  | .18    | .3637  | 22.059 | .0000  | .000  |
| 458.919                     | 610.03 | 609.28 | 6117.71 | 162.62 | .046 | 450.49 | 12151.75 | 3636.40 | .00    | .00    | .3638  | 22.083 | .0000  | .000  |
| 473.919                     | 610.23 | 609.15 | 6117.25 | 195.03 | .055 | 396.41 | 10544.81 | 3752.62 | 146.60 | .38    | .3638  | 22.083 | .0000  | .000  |
| 488.919                     | 610.64 | 609.01 | 6116.49 | 239.83 | .068 | 342.34 | 8867.47  | 3880.16 | 127.88 | .34    | .3637  | 22.056 | .0000  | .000  |
| 503.919                     | 610.90 | 608.93 | 6116.01 | 263.78 | .075 | 320.20 | 8160.22  | 3927.00 | 46.96  | .12    | .3637  | 22.015 | .0000  | .000  |
| 518.919                     | 610.78 | 608.70 | 6115.88 | 270.28 | .077 | 320.78 | 8190.98  | 4037.65 | 110.93 | .29    | .3637  | 21.995 | .0000  | .000  |
| 533.919                     | 610.65 | 608.47 | 6115.74 | 276.77 | .078 | 321.35 | 8221.67  | 4148.48 | 111.13 | .29    | .3636  | 21.986 | .0000  | .000  |
| 548.919                     | 610.51 | 608.24 | 6115.60 | 283.22 | .080 | 321.95 | 8252.29  | 4259.51 | 111.32 | .29    | .3636  | 21.978 | .0000  | .000  |
| 563.919                     | 610.38 | 608.00 | 6115.45 | 289.65 | .082 | 322.54 | 8282.86  | 4370.72 | 111.50 | .29    | .3635  | 21.969 | .0000  | .000  |
| 578.919                     | 610.24 | 607.75 | 6115.30 | 296.05 | .084 | 323.12 | 8313.36  | 4482.12 | 111.69 | .29    | .3635  | 21.961 | .0000  | .000  |
| 593.919                     | 610.10 | 607.50 | 6115.15 | 302.43 | .086 | 323.71 | 8343.90  | 4593.48 | 111.88 | .29    | .3634  | 21.952 | .0000  | .000  |
| 608.919                     | 609.95 | 607.25 | 6115.00 | 308.79 | .088 | 324.29 | 8374.47  | 4705.48 | 112.06 | .29    | .3634  | 21.943 | .0000  | .000  |
| 623.919                     | 609.80 | 606.99 | 6114.85 | 315.13 | .089 | 324.88 | 8404.88  | 4817.44 | 112.25 | .29    | .3633  | 21.935 | .0000  | .000  |
| 638.919                     | 609.65 | 606.73 | 6114.69 | 321.44 | .091 | 325.47 | 8434.73  | 4929.59 | 112.44 | .29    | .3633  | 21.926 | .0000  | .000  |
| 653.919                     | 609.50 | 606.46 | 6114.53 | 327.73 | .093 | 326.05 | 8464.91  | 5041.91 | 112.62 | .29    | .3632  | 21.917 | .0000  | .000  |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 625.204  | 609.34 | 606.18 | 6114.37 | 333.37 | .095 | 326.64 | 8495.03  | 5154.43 | 112.81 | .29 | .3632 | 21.908 | .0000 | .000  |
| 643.204  | 609.18 | 605.90 | 6114.23 | 340.24 | .096 | 327.22 | 8525.09  | 5207.12 | 112.99 | .30 | .3631 | 21.899 | .0000 | .000  |
| 658.204  | 609.01 | 605.62 | 6114.03 | 346.47 | .098 | 327.81 | 8555.08  | 5300.00 | 113.18 | .30 | .3631 | 21.890 | .0000 | .000  |
| 673.204  | 608.85 | 605.33 | 6113.86 | 352.67 | .100 | 328.39 | 8585.02  | 5493.07 | 113.36 | .30 | .3630 | 21.881 | .0000 | .000  |
| 688.204  | 608.68 | 605.04 | 6113.69 | 358.86 | .102 | 328.98 | 8614.88  | 5686.32 | 113.54 | .30 | .3629 | 21.872 | .0000 | .000  |
| 703.204  | 608.50 | 604.74 | 6113.52 | 365.03 | .103 | 329.57 | 8644.69  | 5719.75 | 113.73 | .30 | .3629 | 21.863 | .0000 | .000  |
| 718.204  | 608.33 | 604.44 | 6113.34 | 371.17 | .105 | 330.15 | 8674.43  | 5833.36 | 113.91 | .30 | .3628 | 21.854 | .0000 | .000  |
| 729.191  | 608.23 | 604.28 | 6113.24 | 374.44 | .106 | 330.45 | 8690.24  | 5893.93 | 60.73  | .16 | .3627 | 21.844 | .0000 | .000  |
| 741.191  | 608.08 | 603.97 | 6113.16 | 377.31 | .107 | 332.45 | 8795.53  | 6000.06 | 114.43 | .30 | .3627 | 21.839 | .0000 | .000  |
| 746.336  | 607.90 | 603.86 | 6113.13 | 378.30 | .107 | 333.14 | 8831.49  | 6047.35 | 39.43  | .10 | .3626 | 21.835 | .0000 | .000  |
| 746.346  | 607.68 | 605.29 | 6115.41 | 291.19 | .083 | 428.40 | 11450.50 | 6047.35 | .03    | .00 | .3629 | 21.878 | .0000 | .000  |
| 761.346  | 607.98 | 605.06 | 6114.68 | 321.71 | .091 | 398.30 | 10611.07 | 6109.76 | 142.78 | .37 | .3629 | 21.879 | .0000 | .000  |
| 776.346  | 608.41 | 604.81 | 6113.74 | 357.00 | .101 | 368.20 | 9768.64  | 6321.77 | 132.37 | .35 | .3629 | 21.855 | .0000 | .000  |
| 791.346  | 608.23 | 603.74 | 6112.50 | 398.97 | .113 | 338.10 | 8923.21  | 6493.40 | 121.96 | .33 | .3628 | 21.827 | .0000 | .000  |
| 794.631  | 608.10 | 603.66 | 6112.16 | 409.69 | .116 | 331.11 | 8726.37  | 6470.17 | 26.84  | .07 | .3626 | 21.794 | .0000 | .000  |
| 809.631  | 608.17 | 603.32 | 6112.00 | 414.64 | .118 | 332.11 | 8778.98  | 6584.29 | 114.44 | .31 | .3626 | 21.789 | .0000 | .000  |
| 824.631  | 607.94 | 602.98 | 6111.84 | 419.57 | .119 | 333.10 | 8831.38  | 6698.75 | 114.77 | .31 | .3625 | 21.781 | .0000 | .000  |
| 839.631  | 607.71 | 602.63 | 6111.68 | 424.49 | .120 | 334.10 | 8883.57  | 6813.53 | 115.09 | .31 | .3624 | 21.772 | .0000 | .000  |
| 854.781  | 607.48 | 602.29 | 6111.51 | 429.37 | .122 | 335.09 | 8935.36  | 6928.24 | 115.02 | .31 | .3624 | 21.764 | .0000 | .000  |
| 869.781  | 606.97 | 601.93 | 6111.73 | 422.77 | .120 | 339.53 | 9232.61  | 7044.24 | 116.32 | .32 | .3623 | 21.756 | .0000 | .000  |
| 884.781  | 606.48 | 601.59 | 6111.92 | 416.97 | .118 | 343.98 | 9522.71  | 7161.75 | 117.83 | .32 | .3622 | 21.764 | .0000 | .000  |
| 899.781  | 606.03 | 601.26 | 6112.09 | 411.91 | .117 | 348.42 | 9805.68  | 7280.76 | 119.34 | .33 | .3622 | 21.770 | .0000 | .000  |
| 914.781  | 605.61 | 600.94 | 6112.23 | 407.49 | .116 | 352.87 | 10081.49 | 7401.27 | 120.85 | .34 | .3621 | 21.774 | .0000 | .000  |
| 929.781  | 605.21 | 603.63 | 6112.35 | 403.68 | .114 | 357.31 | 10350.17 | 7523.28 | 122.36 | .34 | .3620 | 21.778 | .0000 | .000  |
| 944.781  | 604.83 | 603.33 | 6112.45 | 400.40 | .113 | 361.76 | 10611.70 | 7646.80 | 123.87 | .35 | .3620 | 21.780 | .0000 | .000  |
| 959.781  | 604.46 | 603.03 | 6112.54 | 397.63 | .113 | 366.20 | 10866.08 | 7771.83 | 125.38 | .35 | .3619 | 21.782 | .0000 | .000  |
| 974.781  | 604.12 | 599.74 | 6112.61 | 395.31 | .112 | 370.65 | 11113.32 | 7898.36 | 126.89 | .36 | .3618 | 21.784 | .0000 | .000  |
| 989.781  | 603.78 | 599.45 | 6112.67 | 393.41 | .112 | 375.09 | 11353.41 | 8026.39 | 128.39 | .36 | .3618 | 21.785 | .0000 | .000  |
| 1004.781 | 603.47 | 599.16 | 6112.72 | 391.91 | .111 | 379.54 | 11586.36 | 8155.92 | 129.90 | .36 | .3617 | 21.785 | .0000 | .000  |
| 1019.781 | 603.16 | 598.80 | 6112.75 | 390.78 | .111 | 383.98 | 11812.17 | 8286.96 | 131.40 | .37 | .3616 | 21.785 | .0000 | .000  |
| 1034.781 | 602.86 | 598.61 | 6112.78 | 390.00 | .111 | 388.43 | 12030.83 | 8419.50 | 132.91 | .37 | .3616 | 21.784 | .0000 | .000  |
| 1049.791 | 602.75 | 598.50 | 6112.78 | 389.77 | .110 | 390.21 | 12116.44 | 8473.02 | 53.67  | .15 | .3615 | 21.783 | .0000 | .000  |
| 1055.791 | 602.48 | 598.23 | 6112.78 | 390.04 | .111 | 393.14 | 12305.76 | 8607.40 | 134.75 | .37 | .3615 | 21.781 | .0000 | .000  |
| 1070.791 | 602.22 | 597.95 | 6112.78 | 390.52 | .111 | 396.07 | 12489.66 | 8742.76 | 135.74 | .38 | .3614 | 21.777 | .0000 | .000  |
| 1084.791 | 601.99 | 597.71 | 6112.74 | 391.11 | .111 | 398.69 | 12649.12 | 8864.33 | 121.91 | .34 | .3613 | 21.774 | .0000 | .000  |
| AF1(A)   | 595.88 | 570.18 | 6078.27 | 971.73 | .276 | .....  | 15823.73 | 9034.86 | 171.23 | .61 | .3611 | 21.786 | ....  | ..... |
| AF1(B)   | 595.89 | 595.89 | 6114.72 | .00    | .000 | .....  | 16413.12 | .....   | .00    | .09 | .3609 | 20.670 | ..... | ..... |



INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA   | DEG. R | T      | U      | H    | LP     | AP       | WDOT    | LB/SEC | DW/DT  | RB     | TAU    | IN/SEC | IN/SEC | TAUTO |
|-----------------------------|--------|--------|--------|--------|--------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   |        |        |        |        | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    |       |
| FUNE                        | 611.67 | 611.63 | 611.63 | 611.72 | 26.31  |        | .007 | 320.17 | 8155.52  | 392.95  | 394.53 | 1.57   | .3643  | 22.246 | .0000  | .0000  |       |
| 15.0003                     | 611.64 | 611.61 | 611.61 | 611.70 | 33.66  |        | .010 | 320.44 | 8169.55  | 503.71  | 111.04 | .29    | .3642  | 22.213 | .0000  | .0000  |       |
| 30.0000                     | 611.63 | 611.58 | 611.58 | 611.68 | 41.00  |        | .012 | 320.71 | 8183.57  | 614.55  | 111.13 | .29    | .3642  | 22.208 | .0000  | .0000  |       |
| 45.0003                     | 611.61 | 611.55 | 611.55 | 611.65 | 48.32  |        | .014 | 320.98 | 8197.58  | 725.49  | 111.22 | .29    | .3642  | 22.204 | .0000  | .0000  |       |
| 60.0000                     | 611.59 | 611.50 | 611.50 | 611.62 | 55.63  |        | .016 | 321.24 | 8211.58  | 836.51  | 111.32 | .29    | .3642  | 22.199 | .0000  | .0000  |       |
| 75.0003                     | 611.57 | 611.46 | 611.46 | 611.59 | 62.91  |        | .018 | 321.51 | 8225.57  | 947.63  | 111.41 | .29    | .3642  | 22.194 | .0000  | .0000  |       |
| 90.0000                     | 611.54 | 611.40 | 611.40 | 611.55 | 70.18  |        | .020 | 321.78 | 8239.54  | 1058.84 | 111.50 | .29    | .3642  | 22.190 | .0000  | .0000  |       |
| 105.0000                    | 611.52 | 611.35 | 611.35 | 611.51 | 77.43  |        | .022 | 322.05 | 8253.51  | 1170.13 | 111.59 | .29    | .3642  | 22.185 | .0000  | .0000  |       |
| 116.7761                    | 611.49 | 611.29 | 611.29 | 611.47 | 83.11  |        | .024 | 322.26 | 8264.45  | 1257.46 | 87.55  | .23    | .3642  | 22.180 | .0000  | .0000  |       |
| 116.771                     | 611.49 | 611.30 | 611.30 | 611.48 | 81.05  |        | .023 | 307.75 | 8274.55  | 1257.46 | .00    | .00    | .3642  | 22.181 | .0000  | .0000  |       |
| 131.771                     | 611.47 | 611.29 | 611.29 | 611.43 | 89.48  |        | .025 | 315.29 | 8334.52  | 1365.15 | 107.98 | .28    | .3642  | 22.181 | .0000  | .0000  |       |
| 143.919                     | 611.45 | 611.18 | 611.18 | 611.38 | 96.64  |        | .027 | 321.40 | 8220.99  | 1454.28 | 89.36  | .23    | .3642  | 22.174 | .0000  | .0000  |       |
| 158.919                     | 611.40 | 611.10 | 611.10 | 611.32 | 103.55 |        | .029 | 322.33 | 8260.53  | 1565.54 | 111.55 | .29    | .3642  | 22.168 | .0000  | .0000  |       |
| 173.919                     | 611.36 | 611.01 | 611.01 | 611.26 | 110.42 |        | .031 | 323.26 | 8299.95  | 1677.13 | 111.87 | .29    | .3641  | 22.163 | .0000  | .0000  |       |
| 186.919                     | 611.31 | 610.92 | 610.92 | 611.20 | 117.25 |        | .033 | 324.20 | 8339.27  | 1789.02 | 112.19 | .29    | .3641  | 22.157 | .0000  | .0000  |       |
| 203.919                     | 611.26 | 610.82 | 610.82 | 611.14 | 124.04 |        | .035 | 325.13 | 8378.47  | 1901.24 | 112.51 | .29    | .3641  | 22.152 | .0000  | .0000  |       |
| 218.919                     | 611.20 | 610.72 | 610.72 | 611.07 | 130.79 |        | .037 | 326.06 | 8417.57  | 2013.77 | 112.83 | .29    | .3641  | 22.146 | .0000  | .0000  |       |
| 233.919                     | 611.14 | 610.61 | 610.61 | 611.00 | 137.50 |        | .039 | 327.93 | 8456.57  | 2126.62 | 113.14 | .29    | .3641  | 22.141 | .0000  | .0000  |       |
| 248.919                     | 611.08 | 610.49 | 610.49 | 610.93 | 144.18 |        | .041 | 327.93 | 8495.45  | 2239.78 | 113.46 | .30    | .3640  | 22.135 | .0000  | .0000  |       |
| 263.919                     | 611.02 | 610.37 | 610.37 | 610.85 | 150.83 |        | .043 | 328.86 | 8534.22  | 2353.26 | 113.78 | .30    | .3640  | 22.129 | .0000  | .0000  |       |
| 278.919                     | 610.95 | 610.25 | 610.25 | 610.77 | 157.44 |        | .045 | 329.80 | 8572.89  | 2467.06 | 114.09 | .30    | .3640  | 22.123 | .0000  | .0000  |       |
| 293.919                     | 610.88 | 610.11 | 610.11 | 610.69 | 164.02 |        | .046 | 330.73 | 8611.45  | 2581.16 | 114.41 | .30    | .3640  | 22.117 | .0000  | .0000  |       |
| 308.919                     | 610.80 | 609.98 | 609.98 | 610.60 | 170.56 |        | .048 | 331.66 | 8649.90  | 2695.59 | 114.72 | .30    | .3639  | 22.111 | .0000  | .0000  |       |
| 323.919                     | 610.73 | 609.84 | 609.84 | 610.51 | 177.08 |        | .050 | 332.60 | 8688.24  | 2810.32 | 115.04 | .30    | .3639  | 22.105 | .0000  | .0000  |       |
| 338.919                     | 610.65 | 609.69 | 609.69 | 610.42 | 183.56 |        | .052 | 333.53 | 8726.47  | 2925.37 | 115.35 | .30    | .3639  | 22.099 | .0000  | .0000  |       |
| 353.919                     | 610.58 | 609.54 | 609.54 | 610.33 | 190.01 |        | .054 | 334.46 | 8764.60  | 3040.73 | 115.66 | .30    | .3638  | 22.092 | .0000  | .0000  |       |
| 368.919                     | 610.48 | 609.38 | 609.38 | 610.23 | 196.44 |        | .056 | 335.39 | 8802.82  | 3156.41 | 115.98 | .30    | .3638  | 22.086 | .0000  | .0000  |       |
| 383.919                     | 610.39 | 609.22 | 609.22 | 610.13 | 202.83 |        | .057 | 336.33 | 8840.52  | 3272.39 | 116.29 | .30    | .3638  | 22.080 | .0000  | .0000  |       |
| 398.919                     | 610.30 | 609.05 | 609.05 | 610.03 | 209.20 |        | .059 | 337.26 | 8878.32  | 3388.69 | 116.60 | .30    | .3637  | 22.073 | .0000  | .0000  |       |
| 403.048                     | 610.27 | 609.01 | 609.01 | 610.00 | 210.95 |        | .060 | 337.52 | 8888.71  | 3420.76 | 116.51 | .30    | .3637  | 22.067 | .0000  | .0000  |       |
| 418.048                     | 610.18 | 608.83 | 608.83 | 610.88 | 217.91 |        | .062 | 335.66 | 8899.54  | 3536.97 | 116.51 | .30    | .3637  | 22.065 | .0000  | .0000  |       |
| 427.051                     | 610.13 | 608.73 | 608.73 | 610.81 | 222.05 |        | .063 | 334.54 | 8926.29  | 3606.40 | 69.62  | .18    | .3637  | 22.059 | .0000  | .0000  |       |
| 427.061                     | 610.03 | 609.28 | 609.28 | 610.71 | 162.62 |        | .046 | 450.49 | 12151.75 | 3656.40 | .00    | .00    | .3638  | 22.083 | .0000  | .0000  |       |
| 442.061                     | 610.23 | 609.15 | 609.15 | 610.25 | 195.23 |        | .055 | 396.41 | 10544.81 | 3752.62 | 146.60 | .38    | .3638  | 22.083 | .0000  | .0000  |       |
| 457.061                     | 610.64 | 609.01 | 609.01 | 610.49 | 239.83 |        | .068 | 342.34 | 8867.47  | 3880.16 | 127.88 | .34    | .3637  | 22.056 | .0000  | .0000  |       |
| 463.204                     | 610.90 | 608.93 | 608.93 | 610.21 | 263.78 |        | .075 | 320.20 | 8160.22  | 3927.00 | 46.96  | .12    | .3637  | 22.015 | .0000  | .0000  |       |
| 478.204                     | 610.78 | 608.70 | 608.70 | 610.88 | 270.28 |        | .077 | 320.78 | 8190.98  | 4037.65 | 110.93 | .29    | .3637  | 21.995 | .0000  | .0000  |       |
| 493.204                     | 610.95 | 608.47 | 608.47 | 610.74 | 276.77 |        | .078 | 321.37 | 8221.67  | 4148.48 | 111.13 | .29    | .3636  | 21.986 | .0000  | .0000  |       |
| 508.204                     | 610.51 | 608.24 | 608.24 | 610.60 | 283.22 |        | .080 | 321.95 | 8252.29  | 4259.51 | 111.32 | .29    | .3636  | 21.978 | .0000  | .0000  |       |
| 523.204                     | 610.38 | 608.00 | 608.00 | 610.45 | 289.65 |        | .082 | 322.54 | 8282.86  | 4370.72 | 111.50 | .29    | .3635  | 21.969 | .0000  | .0000  |       |
| 538.204                     | 610.24 | 607.75 | 607.75 | 610.30 | 296.05 |        | .084 | 323.12 | 8313.36  | 4482.12 | 111.69 | .29    | .3635  | 21.961 | .0000  | .0000  |       |
| 553.204                     | 610.10 | 607.50 | 607.50 | 610.15 | 302.43 |        | .086 | 323.71 | 8343.80  | 4593.71 | 111.88 | .29    | .3634  | 21.952 | .0000  | .0000  |       |
| 568.204                     | 609.95 | 607.25 | 607.25 | 610.03 | 308.79 |        | .088 | 324.29 | 8374.17  | 4705.48 | 112.06 | .29    | .3634  | 21.943 | .0000  | .0000  |       |
| 583.204                     | 609.80 | 606.99 | 606.99 | 610.85 | 315.13 |        | .089 | 324.88 | 8404.48  | 4817.44 | 112.25 | .29    | .3633  | 21.935 | .0000  | .0000  |       |
| 598.204                     | 609.65 | 606.73 | 606.73 | 610.69 | 321.44 |        | .091 | 325.47 | 8434.73  | 4929.59 | 112.44 | .29    | .3633  | 21.926 | .0000  | .0000  |       |
| 613.204                     | 609.50 | 606.46 | 606.46 | 610.53 | 327.73 |        | .093 | 326.05 | 8464.91  | 5041.91 | 112.62 | .29    | .3632  | 21.917 | .0000  | .0000  |       |



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| SLOT                                    |           | PO        | P         | T         | U         | AP        | DW/DOT | AB      | RB     | DELTA   | MSLOT     |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|---------|-----------|
| INTERFACE                               |           | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | TAU IN. | LB/SEC    |
| LOCATION                                |           | IN.       |           |           |           |           |        |         |        |         |           |
| FORWARD                                 | 1.1676+02 | 6.1149+02 | 6.1129+02 | 6.1185+03 | 4.1728+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000  | 1.2575+03 |
| AFT                                     | 1.1677+02 | 6.1150+02 | 6.1130+02 | 6.1185+03 | 4.1727+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000  | 1.2575+03 |
| GAS BUILDUP IN SLOT, DW/DOT = 3.1708-05 |           |           |           |           |           |           |        |         |        |         |           |
| FORWARD                                 | 4.2705+02 | 6.1013+02 | 6.0873+02 | 6.1168+03 | 1.2071+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000  | 3.6064+03 |
| AFT                                     | 4.2706+02 | 6.1068+02 | 6.0928+02 | 6.1177+03 | 1.2062+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000  | 3.6064+03 |
| GAS BUILDUP IN SLOT, DW/DOT = 3.3234-05 |           |           |           |           |           |           |        |         |        |         |           |
| FORWARD                                 | 7.4634+02 | 6.0790+02 | 6.0386+02 | 6.1131+03 | 2.0393+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000  | 6.0474+03 |
| AFT                                     | 7.4635+02 | 6.0933+02 | 6.0529+02 | 6.1154+03 | 2.0352+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000  | 6.0474+03 |
| GAS BUILDUP IN SLOT, DW/DOT = 3.6143-05 |           |           |           |           |           |           |        |         |        |         |           |

IGNITION TIME, TIME (S)

61.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 10340662.     | 2324673.4    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 10604803.     | 2384054.6    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 32093.656     | 7214.9409    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMDT1               | .69665880+09  | .15661513+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 257.20953     | 257.20953    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVT1               | .74241877+09  | .16690238+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6241021     | 1.6241021    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 4187.0870     | 9230.9468    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 291857.37     | 643435.37    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 17.224432     | 37.973373    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 1531.8833     | 3377.2246    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 257.71052     | 399452.27    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 122.56849     | 7479588.2    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 213936.78     | 471649.86    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1022.0520     | 2253.2390    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1597426     | 1.1597426    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.850852     | 28.331279    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1559.6431     | 5116.9393    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .11621174     | .11621174    |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .42928964+09  | 622.63200    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .31819199+11  | 46149.848    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 10.203796     | 15815.916    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .93153081+02  | .36674442    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .60213950     | 23.706280    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 3.1577272     | 192696.34    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 51.946105     | 3169945.8    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PKNT(1,3)            | 3400.7213     | 6121.2984    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 244.08644     | 378334.74    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VPCYL                | 119.14178     | 7270477.5    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 171.30274     | 10453535.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .41888333+09  | 607.53891    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .29796004+11  | 43215.450    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 3.4203895     | 5301.6144    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(N1+1,1)          | .92334506+02  | .36352168    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(N1+2,1)          | .92278913+02  | .36330281    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(N1+1,1)         | .59510046     | 23.232302    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(N1+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .26898488     | 16414.465    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 16.780444     | 1024005.5    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(N1+2,3)         | 3398.7609     | 6117.7696    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5588209     | 2416.1772    |
| EXPANSION RATIO                                                 | EPR                  | 6.8952855     | 6.8952855    |
| PRESSURE RATIO                                                  | PEPO                 | .22710221-01  | .22710221-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLUPS               | 2.0000000     | 2.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | MDOT    | DWDOT  | DW/DT  | RB     | TAU    | IN/SEC | RBTO | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC |      | IN.   |
| TURE                        | 622.63 | 622.60 | 6121.30 | 22.66  | .006 | 329.36 | 8629.32  | 364.36  | 367.82 | 3.45   | .3665  | 23.706 | .0000  |      | .0000 |
| 15.000                      | 622.61 | 622.58 | 6121.28 | 29.72  | .008 | 329.63 | 8643.74  | 478.92  | 114.94 | .38    | .3665  | 23.671 | .0000  |      | .0000 |
| 30.000                      | 622.60 | 622.56 | 6121.27 | 36.78  | .010 | 329.89 | 8658.14  | 593.57  | 115.03 | .38    | .3665  | 23.667 | .0000  |      | .0000 |
| 45.000                      | 622.58 | 622.53 | 6121.24 | 43.82  | .012 | 330.16 | 8672.53  | 708.31  | 115.12 | .38    | .3665  | 23.663 | .0000  |      | .0000 |
| 60.000                      | 622.57 | 622.49 | 6121.22 | 50.84  | .014 | 330.42 | 8686.91  | 823.14  | 115.21 | .38    | .3665  | 23.658 | .0000  |      | .0000 |
| 75.000                      | 622.55 | 622.45 | 6121.19 | 57.85  | .016 | 330.69 | 8701.28  | 938.06  | 115.30 | .38    | .3665  | 23.653 | .0000  |      | .0000 |
| 90.000                      | 622.52 | 622.40 | 6121.15 | 64.84  | .018 | 330.95 | 8715.63  | 1053.07 | 115.39 | .38    | .3665  | 23.648 | .0000  |      | .0000 |
| 105.000                     | 622.50 | 622.35 | 6121.12 | 71.81  | .020 | 331.22 | 8729.98  | 1168.17 | 115.48 | .38    | .3665  | 23.643 | .0000  |      | .0000 |
| 116.761                     | 622.48 | 622.30 | 6121.08 | 77.27  | .022 | 331.43 | 8741.21  | 1258.48 | 90.61  | .30    | .3665  | 23.638 | .0000  |      | .0000 |
| 116.771                     | 622.48 | 622.31 | 6121.09 | 75.65  | .021 | 313.80 | 8927.86  | 1258.48 | .00    | .00    | .3665  | 23.640 | .0000  |      | .0000 |
| 131.771                     | 622.45 | 622.25 | 6121.04 | 83.51  | .024 | 323.08 | 8800.07  | 1369.17 | 111.07 | .38    | .3665  | 23.640 | .0000  |      | .0000 |
| 143.919                     | 622.43 | 622.20 | 6121.00 | 90.19  | .026 | 330.58 | 8696.47  | 1461.18 | 92.32  | .31    | .3665  | 23.632 | .0000  |      | .0000 |
| 156.919                     | 622.39 | 622.12 | 6120.95 | 96.85  | .027 | 331.52 | 8737.44  | 1576.25 | 115.46 | .38    | .3664  | 23.627 | .0000  |      | .0000 |
| 173.919                     | 622.35 | 622.04 | 6120.90 | 103.47 | .029 | 332.45 | 8778.28  | 1691.65 | 115.78 | .39    | .3664  | 23.621 | .0000  |      | .0000 |
| 186.919                     | 622.31 | 621.96 | 6120.84 | 110.05 | .031 | 333.38 | 8819.00  | 1807.36 | 116.10 | .39    | .3664  | 23.616 | .0000  |      | .0000 |
| 203.919                     | 622.26 | 621.87 | 6120.79 | 116.59 | .033 | 334.31 | 8859.60  | 1923.39 | 116.42 | .39    | .3664  | 23.610 | .0000  |      | .0000 |
| 218.919                     | 622.21 | 621.77 | 6120.72 | 123.10 | .035 | 335.24 | 8900.08  | 2039.74 | 116.74 | .39    | .3664  | 23.605 | .0000  |      | .0000 |
| 233.919                     | 622.16 | 621.67 | 6120.66 | 129.57 | .037 | 336.17 | 8940.44  | 2156.40 | 117.06 | .39    | .3664  | 23.599 | .0000  |      | .0000 |
| 248.919                     | 622.10 | 621.56 | 6120.59 | 136.01 | .039 | 337.10 | 8980.68  | 2273.39 | 117.37 | .39    | .3663  | 23.593 | .0000  |      | .0000 |
| 263.919                     | 622.04 | 621.45 | 6120.52 | 142.42 | .040 | 338.04 | 9020.79  | 2390.69 | 117.69 | .39    | .3663  | 23.587 | .0000  |      | .0000 |
| 279.919                     | 621.98 | 621.34 | 6120.45 | 148.79 | .042 | 338.97 | 9060.76  | 2508.30 | 118.01 | .39    | .3663  | 23.581 | .0000  |      | .0000 |
| 293.919                     | 621.91 | 621.22 | 6120.37 | 155.13 | .044 | 339.90 | 9100.66  | 2626.23 | 118.33 | .40    | .3663  | 23.575 | .0000  |      | .0000 |
| 308.919                     | 621.84 | 621.04 | 6120.30 | 161.44 | .046 | 340.83 | 9140.41  | 2744.48 | 118.64 | .40    | .3662  | 23.569 | .0000  |      | .0000 |
| 323.919                     | 621.77 | 620.96 | 6120.21 | 167.72 | .048 | 341.76 | 9180.03  | 2863.04 | 118.96 | .40    | .3662  | 23.562 | .0000  |      | .0000 |
| 338.919                     | 621.70 | 620.82 | 6120.13 | 173.97 | .049 | 342.69 | 9219.54  | 2981.92 | 119.28 | .40    | .3662  | 23.556 | .0000  |      | .0000 |
| 353.919                     | 621.62 | 620.68 | 6120.04 | 180.20 | .051 | 343.62 | 9258.93  | 3101.11 | 119.59 | .40    | .3662  | 23.550 | .0000  |      | .0000 |
| 368.919                     | 621.54 | 620.54 | 6119.96 | 186.39 | .053 | 344.56 | 9298.19  | 3220.62 | 119.91 | .40    | .3661  | 23.543 | .0000  |      | .0000 |
| 383.919                     | 621.46 | 620.39 | 6119.86 | 192.56 | .055 | 345.49 | 9337.34  | 3340.44 | 120.22 | .40    | .3661  | 23.537 | .0000  |      | .0000 |
| 398.919                     | 621.37 | 620.23 | 6119.77 | 198.70 | .056 | 346.42 | 9376.36  | 3460.57 | 120.54 | .40    | .3661  | 23.530 | .0000  |      | .0000 |
| 403.048                     | 621.35 | 620.19 | 6119.74 | 200.39 | .057 | 346.67 | 9387.08  | 3493.69 | 33.23  | .11    | .3660  | 23.523 | .0000  |      | .0000 |
| 418.048                     | 621.27 | 620.03 | 6119.64 | 207.14 | .059 | 346.81 | 9395.17  | 3613.73 | 120.45 | .40    | .3660  | 23.522 | .0000  |      | .0000 |
| 427.051                     | 621.22 | 619.93 | 6119.57 | 211.17 | .060 | 343.70 | 9400.26  | 3685.47 | 71.98  | .24    | .3660  | 23.516 | .0000  |      | .0000 |
| 427.061                     | 621.13 | 620.43 | 6120.38 | 154.84 | .044 | 455.51 | 12811.76 | 3685.47 | .00    | .00    | .3661  | 23.540 | .0000  |      | .0000 |
| 442.061                     | 621.31 | 620.32 | 6119.97 | 185.46 | .053 | 403.16 | 11130.20 | 3834.55 | 149.59 | .51    | .3661  | 23.540 | .0000  |      | .0000 |
| 457.061                     | 621.08 | 620.18 | 6119.28 | 227.75 | .065 | 350.81 | 9374.07  | 3965.45 | 131.34 | .44    | .3661  | 23.512 | .0000  |      | .0000 |
| 463.204                     | 621.92 | 620.11 | 6118.86 | 250.31 | .071 | 329.37 | 8633.35  | 4013.81 | 48.52  | .16    | .3660  | 23.472 | .0000  |      | .0000 |
| 478.204                     | 621.80 | 619.99 | 6118.74 | 256.59 | .073 | 329.96 | 8664.97  | 4128.27 | 114.84 | .38    | .3660  | 23.452 | .0000  |      | .0000 |
| 493.204                     | 621.69 | 619.69 | 6118.61 | 262.85 | .074 | 330.54 | 8696.51  | 4242.92 | 115.03 | .38    | .3660  | 23.443 | .0000  |      | .0000 |
| 508.204                     | 621.56 | 619.47 | 6118.48 | 269.08 | .076 | 331.12 | 8727.99  | 4357.76 | 115.22 | .38    | .3659  | 23.434 | .0000  |      | .0000 |
| 523.204                     | 621.44 | 619.25 | 6118.35 | 275.28 | .078 | 331.70 | 8759.38  | 4472.78 | 115.41 | .39    | .3659  | 23.426 | .0000  |      | .0000 |
| 538.204                     | 621.31 | 619.02 | 6118.21 | 281.46 | .080 | 332.29 | 8790.71  | 4588.00 | 115.60 | .39    | .3658  | 23.417 | .0000  |      | .0000 |
| 553.204                     | 621.18 | 618.79 | 6118.07 | 287.62 | .081 | 332.67 | 8821.96  | 4703.40 | 115.79 | .39    | .3658  | 23.408 | .0000  |      | .0000 |
| 568.204                     | 621.04 | 618.55 | 6117.93 | 293.76 | .083 | 333.45 | 8853.13  | 4818.99 | 115.98 | .39    | .3657  | 23.399 | .0000  |      | .0000 |
| 583.204                     | 620.90 | 618.31 | 6117.79 | 299.87 | .085 | 334.03 | 8884.24  | 4934.77 | 116.16 | .39    | .3657  | 23.390 | .0000  |      | .0000 |
| 598.204                     | 620.76 | 618.07 | 6117.65 | 305.97 | .087 | 334.62 | 8915.27  | 5050.73 | 116.35 | .39    | .3656  | 23.381 | .0000  |      | .0000 |
| 613.204                     | 620.62 | 617.82 | 6117.50 | 312.34 | .088 | 335.20 | 8946.22  | 5166.88 | 116.54 | .39    | .3656  | 23.372 | .0000  |      | .0000 |

|          |        |        |         |        |      |        |          |         |        |     |      |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|------|--------|-------|-------|
| 628.204  | 620.47 | 617.56 | 6117.35 | 318.09 | .090 | 335.78 | 8977.11  | 5283.21 | 116.73 | .39 | 3355 | 23.363 | .0000 | .000  |
| 643.204  | 620.33 | 617.30 | 6117.20 | 324.12 | .092 | 336.36 | 9007.71  | 5399.73 | 116.91 | .39 | 3655 | 23.353 | .0000 | .000  |
| 658.204  | 620.17 | 617.04 | 6117.04 | 330.13 | .094 | 336.95 | 9038.65  | 5516.42 | 117.10 | .39 | 3654 | 23.344 | .0000 | .000  |
| 673.204  | 620.02 | 616.77 | 6116.89 | 336.13 | .095 | 337.53 | 9069.31  | 5633.32 | 117.28 | .39 | 3654 | 23.335 | .0000 | .000  |
| 688.204  | 619.86 | 616.49 | 6116.73 | 342.10 | .097 | 338.11 | 9099.90  | 5750.39 | 117.47 | .39 | 3653 | 23.325 | .0000 | .000  |
| 703.204  | 619.70 | 616.22 | 6116.57 | 348.06 | .099 | 338.70 | 9130.41  | 5867.65 | 117.65 | .40 | 3653 | 23.316 | .0000 | .000  |
| 718.204  | 619.54 | 615.93 | 6116.40 | 354.00 | .100 | 339.28 | 9160.85  | 5985.09 | 117.84 | .40 | 3652 | 23.307 | .0000 | .000  |
| 733.204  | 619.45 | 615.78 | 6116.31 | 357.15 | .101 | 339.59 | 9177.03  | 6047.69 | 118.02 | .40 | 3651 | 23.297 | .0000 | .000  |
| 748.204  | 619.22 | 615.49 | 6116.23 | 360.05 | .102 | 341.58 | 9285.14  | 6165.65 | 118.36 | .40 | 3651 | 23.292 | .0000 | .000  |
| 763.204  | 619.14 | 615.39 | 6116.20 | 361.04 | .102 | 342.26 | 9322.34  | 6206.27 | 40.75  | .14 | 3651 | 23.280 | .0000 | .000  |
| 778.204  | 618.94 | 616.71 | 6118.28 | 278.16 | .079 | 434.76 | 12077.89 | 6206.27 | .00    | .00 | 3653 | 23.332 | .0000 | .000  |
| 793.204  | 619.22 | 616.50 | 6117.62 | 307.19 | .087 | 405.52 | 11195.37 | 6351.85 | 146.08 | .50 | 3653 | 23.333 | .0000 | .000  |
| 808.204  | 619.61 | 616.27 | 6116.76 | 340.78 | .097 | 376.28 | 12309.70 | 6487.29 | 135.90 | .46 | 3653 | 23.309 | .0000 | .000  |
| 823.204  | 619.44 | 615.28 | 6115.63 | 380.68 | .108 | 347.04 | 9420.87  | 6612.59 | 125.72 | .42 | 3652 | 23.280 | .0000 | .000  |
| 838.204  | 619.60 | 615.21 | 6115.32 | 393.88 | .111 | 340.25 | 9213.92  | 6640.24 | 27.74  | .09 | 3653 | 23.246 | .0000 | .000  |
| 853.204  | 619.39 | 614.89 | 6115.18 | 395.70 | .112 | 341.24 | 9267.95  | 6758.21 | 118.37 | .40 | 3650 | 23.241 | .0000 | .000  |
| 868.204  | 619.18 | 614.57 | 6115.03 | 400.50 | .114 | 342.23 | 9321.73  | 6876.52 | 118.70 | .40 | 3649 | 23.233 | .0000 | .000  |
| 883.204  | 618.96 | 614.25 | 6114.87 | 405.29 | .115 | 343.22 | 9375.26  | 6995.14 | 119.03 | .40 | 3649 | 23.224 | .0000 | .000  |
| 898.204  | 618.75 | 613.93 | 6114.72 | 410.04 | .116 | 344.21 | 9428.37  | 7113.69 | 118.95 | .40 | 3648 | 23.216 | .0000 | .000  |
| 913.204  | 618.28 | 613.60 | 6114.92 | 403.99 | .114 | 348.65 | 9736.39  | 7233.55 | 120.27 | .41 | 3647 | 23.207 | .0000 | .000  |
| 928.204  | 617.83 | 613.28 | 6115.08 | 398.70 | .113 | 353.10 | 10036.50 | 7354.92 | 121.79 | .42 | 3647 | 23.215 | .0000 | .000  |
| 943.204  | 617.42 | 612.97 | 6115.23 | 394.10 | .112 | 357.54 | 10328.68 | 7477.80 | 123.31 | .43 | 3646 | 23.220 | .0000 | .000  |
| 958.204  | 617.02 | 612.67 | 6115.35 | 390.13 | .111 | 361.98 | 10612.94 | 7602.19 | 124.83 | .44 | 3645 | 23.225 | .0000 | .000  |
| 973.204  | 616.65 | 612.38 | 6115.45 | 386.71 | .110 | 366.42 | 10889.28 | 7728.10 | 126.35 | .45 | 3645 | 23.228 | .0000 | .000  |
| 988.204  | 616.30 | 612.09 | 6115.54 | 383.82 | .109 | 370.87 | 11157.69 | 7855.52 | 127.87 | .45 | 3644 | 23.230 | .0000 | .000  |
| 1003.204 | 615.97 | 611.81 | 6115.61 | 381.40 | .108 | 375.31 | 11418.18 | 7984.44 | 129.39 | .46 | 3644 | 23.232 | .0000 | .000  |
| 1018.204 | 615.65 | 611.53 | 6115.67 | 379.41 | .108 | 379.75 | 11670.75 | 8114.88 | 130.91 | .47 | 3643 | 23.233 | .0000 | .000  |
| 1033.204 | 615.34 | 611.26 | 6115.72 | 377.84 | .107 | 384.19 | 11915.40 | 8246.83 | 132.42 | .47 | 3642 | 23.234 | .0000 | .000  |
| 1048.204 | 615.04 | 611.00 | 6115.75 | 376.64 | .107 | 388.64 | 12152.12 | 8380.29 | 133.94 | .48 | 3642 | 23.234 | .0000 | .000  |
| 1063.204 | 614.74 | 610.73 | 6115.78 | 375.80 | .106 | 393.08 | 12380.92 | 8515.26 | 135.45 | .48 | 3641 | 23.233 | .0000 | .000  |
| 1078.204 | 614.49 | 610.47 | 6115.79 | 375.29 | .106 | 397.52 | 12621.80 | 8651.74 | 136.97 | .49 | 3640 | 23.232 | .0000 | .000  |
| 1093.204 | 614.38 | 610.37 | 6115.80 | 375.17 | .106 | 399.30 | 12888.08 | 8706.84 | 55.30  | .20 | 3640 | 23.231 | .0000 | .000  |
| 1108.204 | 614.13 | 610.11 | 6115.79 | 375.55 | .106 | 402.63 | 12882.04 | 8845.17 | 138.82 | .49 | 3639 | 23.229 | .0000 | .000  |
| 1123.204 | 613.88 | 609.85 | 6115.77 | 376.14 | .107 | 405.17 | 13070.06 | 8984.48 | 139.81 | .50 | 3638 | 23.225 | .0000 | .000  |
| 1138.204 | 613.67 | 609.62 | 6115.75 | 376.83 | .107 | 407.79 | 13232.96 | 9109.57 | 125.54 | .45 | 3638 | 23.221 | .0000 | .000  |
| 1153.204 | 607.54 | 601.21 | 6081.04 | 974.14 | .277 | .....  | 15823.73 | 9230.95 | 122.28 | .67 | 3635 | 23.232 | ....  | ..... |
| 1168.204 | 607.53 | 607.53 | 6117.77 | .01    | .000 | .....  | 10413.12 | -.24    | .00    | .24 | 3633 | 20.670 | ....  | ..... |

| SLOT<br>INTERFACE<br>LOCATION          |           | PO        | P         | T         | U         | AP        | DMDOT  | AD      | RB     | DELTA<br>TAU | MSLOT     |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------------|-----------|
| IN.                                    |           | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | IN.          | LB/SEC    |
| FORWARD                                | 1-1676+02 | 6-2248+02 | 6-2230+02 | 6-1211+03 | 4-1034+01 | 1-6460+04 | 0-0000 | 0-0000  | 0-0000 | 0-0000       | 1-2585+03 |
| AFT                                    | 1-1677+02 | 6-2248+02 | 6-2231+02 | 6-1211+03 | 4-1034+01 | 1-6460+04 | 0-0000 | 0-0000  | 0-0000 | 0-0000       | 1-2585+03 |
| GAS BUILDUP IN SLOT, DW/DI = 1.3158-04 |           |           |           |           |           |           |        |         |        |              |           |
| FORWARD                                | 4-2705+02 | 6-2122+02 | 6-1993+02 | 6-1196+03 | 1-2117+02 | 1-6383+04 | 0-0000 | 0-0000  | 0-0000 | 0-0000       | 3-6855+03 |
| AFT                                    | 4-2706+02 | 6-2172+02 | 6-2043+02 | 6-1204+03 | 1-2108+02 | 1-6383+04 | 0-0000 | 0-0000  | 0-0000 | 0-0000       | 3-6855+03 |
| GAS BUILDUP IN SLOT, DW/DI = 1.3273-04 |           |           |           |           |           |           |        |         |        |              |           |
| FORWARD                                | 7-4634+02 | 6-1914+02 | 6-1539+02 | 6-1162+03 | 2-0543+02 | 1-6383+04 | 0-0000 | 0-0000  | 0-0000 | 0-0000       | 6-2063+03 |
| AFT                                    | 7-4635+02 | 6-2047+02 | 6-1671+02 | 6-1183+03 | 2-0506+02 | 1-6383+04 | 0-0000 | 0-0000  | 0-0000 | 0-0000       | 6-2063+03 |
| GAS BUILDUP IN SLOT, DW/DI = 1.3571-04 |           |           |           |           |           |           |        |         |        |              |           |

IGNITION TIME, TIME (S) 65.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10670916.     | 2400715.8    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 13893793.     | 2449022.1    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 34725.219     | 7806.5397    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)        | SRMOTI               | .73867442+09  | .16606511+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.18601     | 257.18601    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)           | SRMVTI               | .78541077+09  | .17656737+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6240360     | 1.6240360    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4300.6406     | 9481.2896    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 308830.96     | 680855.73    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 18.636773     | 41.087051    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1458.8523     | 3216.2187    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 262.56092     | 406970.25    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 112.85349     | 6886742.3    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 196077.56     | 434084.82    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1098.8209     | 2400.4392    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597573     | 1.1597573    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.853579     | 28.337292    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.8519     | 5117.6243    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .11081643     | .11081643    |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .43940068+09  | 637.29681    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPHDT                | .33556388+11  | 48669.426    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 9.5530962     | 14807.329    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .93915565+02  | .36974632    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .63947581     | 25.176213    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 2.7898121     | 170244.78    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 52.314020     | 3192397.4    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3402.6386     | 6124.7495    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 250.40053     | 388121.60    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLUT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 109.90633     | 6706896.1    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 180.53846     | 11017132.    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .42937899+09  | 622.76157    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPONDT               | .31492346+11  | 45675.787    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 2.6072990     | 4041.3216    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .93131160+02  | .36665811    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .93068799+02  | .36641260    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .62711292     | 24.689485    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670300    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .15734061     | 9601.5132    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 16.892089     | 1030818.5    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3400.7492     | 6121.3485    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.200839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5622218     | 2421.4486    |
| EXPANSION RATIO                            | EPR                  | 6.8802747     | 6.8802747    |
| PRESSURE RATIO                             | PEPU                 | .22774483+01  | .22774483+01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250+01  | .37810250+01 |
| NUMBER OF PRESSURE ITERATIONS              | ARLOPS               | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA    | DEG. R | T    | U      | M        | LP      | AP      | WDOT   | LB/SEC | DW/DT  | RB     | TAU  | R8TO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|---------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   |        |         |        |      | FT/SEC |          | INCHES  | SQ. IN. | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FUEL                        | 637.30 | 637.27 | 6124.75 | 19.74  | .006 | 338.62 | 9119.86  | 343.32  | 347.18  | 3.86   | .3695  | 25.176 | .0000  | .000 | .000   | .000  |
| 15.000                      | 637.28 | 637.26 | 6124.74 | 26.52  | .008 | 338.88 | 9134.77  | 462.03  | 119.14  | .42    | .3695  | 25.141 | .0000  | .000 | .000   | .000  |
| 30.000                      | 637.27 | 637.24 | 6124.72 | 33.29  | .009 | 339.14 | 9149.56  | 580.83  | 119.23  | .42    | .3695  | 25.136 | .0000  | .000 | .000   | .000  |
| 45.000                      | 637.26 | 637.21 | 6124.70 | 40.04  | .011 | 339.40 | 9164.33  | 699.73  | 119.32  | .42    | .3695  | 25.132 | .0000  | .000 | .000   | .000  |
| 60.000                      | 637.24 | 637.18 | 6124.68 | 46.77  | .013 | 339.67 | 9179.09  | 818.72  | 119.41  | .42    | .3695  | 25.127 | .0000  | .000 | .000   | .000  |
| 75.000                      | 637.22 | 637.14 | 6124.65 | 53.49  | .015 | 339.93 | 9193.83  | 937.79  | 119.50  | .42    | .3695  | 25.122 | .0000  | .000 | .000   | .000  |
| 90.000                      | 637.20 | 637.10 | 6124.62 | 60.19  | .017 | 340.19 | 9208.57  | 1056.96 | 119.59  | .43    | .3695  | 25.117 | .0000  | .000 | .000   | .000  |
| 105.000                     | 637.18 | 637.05 | 6124.59 | 66.88  | .019 | 340.45 | 9223.28  | 1176.21 | 119.68  | .43    | .3695  | 25.112 | .0000  | .000 | .000   | .000  |
| 116.761                     | 637.16 | 637.00 | 6124.56 | 72.12  | .020 | 340.66 | 9234.81  | 1269.78 | 93.90   | .33    | .3695  | 25.107 | .0000  | .000 | .000   | .000  |
| 116.771                     | 637.16 | 637.01 | 6124.57 | 70.91  | .020 | 318.85 | 9392.61  | 1269.78 | .00     | .00    | .3695  | 25.108 | .0000  | .000 | .000   | .000  |
| 131.771                     | 637.14 | 636.96 | 6124.52 | 78.20  | .022 | 330.44 | 9280.06  | 1383.52 | 114.16  | .41    | .3695  | 25.108 | .0000  | .000 | .000   | .000  |
| 144.919                     | 637.12 | 636.91 | 6124.49 | 84.41  | .024 | 339.84 | 9188.82  | 1478.62 | 95.44   | .34    | .3695  | 25.101 | .0000  | .000 | .000   | .000  |
| 157.919                     | 637.08 | 636.84 | 6124.44 | 90.81  | .026 | 340.77 | 9231.23  | 1597.86 | 119.66  | .43    | .3695  | 25.096 | .0000  | .000 | .000   | .000  |
| 171.919                     | 637.04 | 636.76 | 6124.39 | 97.17  | .028 | 341.70 | 9273.50  | 1717.42 | 119.98  | .43    | .3694  | 25.090 | .0000  | .000 | .000   | .000  |
| 186.919                     | 637.00 | 636.69 | 6124.34 | 103.49 | .029 | 342.63 | 9315.84  | 1837.29 | 120.31  | .43    | .3694  | 25.084 | .0000  | .000 | .000   | .000  |
| 203.919                     | 636.96 | 636.60 | 6124.29 | 109.78 | .031 | 343.55 | 9357.64  | 1957.49 | 120.63  | .43    | .3694  | 25.079 | .0000  | .000 | .000   | .000  |
| 218.919                     | 636.91 | 636.51 | 6124.24 | 116.04 | .033 | 344.48 | 9399.51  | 2078.01 | 120.95  | .43    | .3694  | 25.073 | .0000  | .000 | .000   | .000  |
| 233.919                     | 636.86 | 636.42 | 6124.18 | 122.26 | .035 | 345.41 | 9441.24  | 2198.85 | 121.27  | .43    | .3694  | 25.067 | .0000  | .000 | .000   | .000  |
| 248.919                     | 636.81 | 636.32 | 6124.12 | 128.45 | .036 | 346.34 | 9482.84  | 2320.00 | 121.59  | .43    | .3694  | 25.061 | .0000  | .000 | .000   | .000  |
| 263.919                     | 636.76 | 636.22 | 6124.05 | 134.61 | .038 | 347.27 | 9524.30  | 2441.48 | 121.91  | .44    | .3693  | 25.055 | .0000  | .000 | .000   | .000  |
| 278.919                     | 636.70 | 636.11 | 6123.99 | 140.73 | .040 | 348.20 | 9565.63  | 2563.27 | 122.23  | .44    | .3693  | 25.049 | .0000  | .000 | .000   | .000  |
| 293.919                     | 636.64 | 636.00 | 6123.92 | 146.83 | .042 | 349.13 | 9606.83  | 2685.38 | 122.55  | .44    | .3693  | 25.043 | .0000  | .000 | .000   | .000  |
| 308.919                     | 636.58 | 635.88 | 6123.85 | 152.90 | .043 | 350.06 | 9647.89  | 2807.81 | 122.87  | .44    | .3693  | 25.037 | .0000  | .000 | .000   | .000  |
| 323.919                     | 636.51 | 635.76 | 6123.77 | 158.93 | .045 | 350.99 | 9688.81  | 2930.56 | 123.19  | .44    | .3692  | 25.030 | .0000  | .000 | .000   | .000  |
| 338.919                     | 636.44 | 635.64 | 6123.70 | 164.95 | .047 | 351.92 | 9729.60  | 3053.63 | 123.51  | .44    | .3692  | 25.024 | .0000  | .000 | .000   | .000  |
| 353.919                     | 636.37 | 635.51 | 6123.62 | 170.93 | .048 | 352.85 | 9770.25  | 3177.01 | 123.83  | .44    | .3692  | 25.017 | .0000  | .000 | .000   | .000  |
| 368.919                     | 636.30 | 635.37 | 6123.54 | 176.89 | .050 | 353.78 | 9810.77  | 3300.71 | 124.14  | .45    | .3692  | 25.011 | .0000  | .000 | .000   | .000  |
| 383.919                     | 636.22 | 635.23 | 6123.45 | 182.82 | .052 | 354.71 | 9851.16  | 3424.72 | 124.46  | .45    | .3691  | 25.004 | .0000  | .000 | .000   | .000  |
| 398.919                     | 636.14 | 635.09 | 6123.37 | 188.72 | .053 | 355.63 | 9891.41  | 3549.05 | 124.78  | .45    | .3691  | 24.997 | .0000  | .000 | .000   | .000  |
| 403.048                     | 636.12 | 635.04 | 6123.34 | 190.34 | .054 | 355.89 | 9902.47  | 3583.33 | 34.40   | .12    | .3691  | 24.991 | .0000  | .000 | .000   | .000  |
| 418.048                     | 636.04 | 634.90 | 6123.24 | 196.88 | .056 | 354.03 | 9907.79  | 3707.57 | 124.69  | .45    | .3691  | 24.989 | .0000  | .000 | .000   | .000  |
| 427.051                     | 635.99 | 634.80 | 6123.18 | 200.78 | .057 | 352.91 | 9911.23  | 3781.82 | 74.52   | .27    | .3690  | 24.983 | .0000  | .000 | .000   | .000  |
| 427.061                     | 635.91 | 635.27 | 6123.91 | 147.49 | .042 | 460.47 | 13483.80 | 3781.82 | .00     | .00    | .3691  | 25.007 | .0000  | .000 | .000   | .000  |
| 442.061                     | 636.08 | 635.16 | 6123.54 | 176.40 | .050 | 409.90 | 11729.57 | 3934.15 | 152.89  | .56    | .3691  | 25.007 | .0000  | .000 | .000   | .000  |
| 457.061                     | 636.42 | 635.34 | 6122.93 | 216.25 | .061 | 359.33 | 9896.68  | 4068.78 | 135.12  | .49    | .3691  | 24.980 | .0000  | .000 | .000   | .000  |
| 473.204                     | 636.64 | 634.97 | 6122.55 | 237.47 | .067 | 338.62 | 9123.35  | 4118.80 | 50.20   | .18    | .3691  | 24.939 | .0000  | .000 | .000   | .000  |
| 488.204                     | 636.53 | 634.77 | 6122.44 | 243.51 | .069 | 339.20 | 9155.84  | 4237.42 | 119.04  | .42    | .3691  | 24.919 | .0000  | .000 | .000   | .000  |
| 493.204                     | 636.42 | 634.58 | 6122.32 | 249.53 | .071 | 339.78 | 9188.25  | 4356.23 | 119.24  | .42    | .3690  | 24.910 | .0000  | .000 | .000   | .000  |
| 508.204                     | 636.30 | 634.37 | 6122.20 | 255.53 | .072 | 340.36 | 9225.57  | 4475.24 | 119.43  | .43    | .3690  | 24.901 | .0000  | .000 | .000   | .000  |
| 523.204                     | 636.19 | 634.17 | 6122.08 | 261.50 | .074 | 340.94 | 9252.81  | 4594.43 | 119.62  | .43    | .3689  | 24.892 | .0000  | .000 | .000   | .000  |
| 538.204                     | 636.07 | 633.95 | 6121.96 | 267.45 | .076 | 341.52 | 9284.97  | 4713.81 | 119.81  | .43    | .3689  | 24.883 | .0000  | .000 | .000   | .000  |
| 553.204                     | 635.95 | 633.74 | 6121.83 | 273.37 | .077 | 342.10 | 9317.04  | 4833.38 | 120.00  | .43    | .3689  | 24.874 | .0000  | .000 | .000   | .000  |
| 568.204                     | 635.82 | 633.52 | 6121.70 | 279.28 | .079 | 342.68 | 9349.72  | 4953.14 | 120.19  | .43    | .3688  | 24.865 | .0000  | .000 | .000   | .000  |
| 583.204                     | 635.69 | 633.24 | 6121.57 | 285.17 | .081 | 343.26 | 9383.92  | 5073.39 | 120.38  | .43    | .3688  | 24.856 | .0000  | .000 | .000   | .000  |
| 598.204                     | 635.56 | 633.06 | 6121.44 | 291.03 | .082 | 343.84 | 9412.74  | 5193.23 | 120.57  | .43    | .3687  | 24.846 | .0000  | .000 | .000   | .000  |
| 613.204                     | 635.43 | 632.83 | 6121.31 | 296.88 | .084 | 344.42 | 9444.48  | 5313.55 | 120.76  | .43    | .3687  | 24.837 | .0000  | .000 | .000   | .000  |



|          |        |        |         |        |      |        |          |         |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|
| 626.204  | 635.29 | 632.59 | 6121.17 | 302.70 | .086 | 345.30 | 9476.13  | 5434.06 | 120.94 | .43 | .3686 | 24.828 | .0000 |
| 643.204  | 635.16 | 632.35 | 6121.03 | 308.51 | .087 | 345.58 | 9507.69  | 5554.76 | 121.13 | .43 | .3686 | 24.818 | .0000 |
| 658.204  | 635.01 | 632.10 | 6120.89 | 314.30 | .089 | 346.16 | 9539.17  | 5675.64 | 121.32 | .44 | .3685 | 24.809 | .0000 |
| 673.204  | 634.87 | 631.85 | 6120.74 | 320.07 | .091 | 346.74 | 9570.57  | 5796.71 | 121.51 | .44 | .3685 | 24.799 | .0000 |
| 686.204  | 634.72 | 631.60 | 6120.60 | 325.82 | .092 | 347.31 | 9601.88  | 5917.97 | 121.69 | .44 | .3684 | 24.790 | .0000 |
| 703.204  | 634.57 | 631.34 | 6120.45 | 331.56 | .094 | 347.89 | 9633.11  | 6039.41 | 121.88 | .44 | .3684 | 24.780 | .0000 |
| 718.204  | 634.42 | 631.07 | 6120.30 | 337.28 | .096 | 348.47 | 9664.26  | 6161.03 | 122.06 | .44 | .3683 | 24.771 | .0000 |
| 728.191  | 634.34 | 630.93 | 6120.22 | 343.32 | .096 | 348.78 | 9680.91  | 6225.87 | 65.07  | .23 | .3683 | 24.761 | .0000 |
| 741.191  | 634.13 | 630.66 | 6120.14 | 349.21 | .097 | 350.77 | 9791.76  | 6348.02 | 122.59 | .44 | .3682 | 24.756 | .0000 |
| 746.336  | 634.05 | 630.57 | 6120.12 | 344.20 | .098 | 351.46 | 9829.61  | 6390.07 | 42.21  | .15 | .3682 | 24.751 | .0000 |
| 746.346  | 633.97 | 631.79 | 6121.99 | 265.57 | .075 | 441.08 | 12719.18 | 6390.07 | .00    | .00 | .3684 | 24.796 | .0000 |
| 761.346  | 634.13 | 631.60 | 6121.39 | 293.14 | .083 | 412.74 | 11794.54 | 6539.22 | 149.69 | .54 | .3684 | 24.797 | .0000 |
| 776.346  | 634.49 | 631.38 | 6120.62 | 325.01 | .092 | 384.40 | 10866.59 | 6678.46 | 139.75 | .51 | .3684 | 24.773 | .0000 |
| 791.346  | 634.33 | 630.46 | 6119.60 | 362.83 | .103 | 356.05 | 9935.33  | 6807.79 | 12.79  | .47 | .3683 | 24.744 | .0000 |
| 794.831  | 634.48 | 630.39 | 6119.32 | 372.51 | .106 | 349.47 | 9718.49  | 6836.41 | .72    | .10 | .3681 | 24.709 | .0000 |
| 804.831  | 634.28 | 630.10 | 6119.18 | 377.18 | .107 | 350.45 | 9773.94  | 6958.58 | 122.62 | .44 | .3681 | 24.704 | .0000 |
| 824.831  | 634.09 | 629.80 | 6119.04 | 381.84 | .108 | 351.45 | 9829.11  | 7081.09 | 122.95 | .44 | .3681 | 24.696 | .0000 |
| 834.831  | 633.89 | 629.50 | 6118.90 | 386.48 | .110 | 352.42 | 9884.00  | 7203.92 | 123.27 | .45 | .3680 | 24.687 | .0000 |
| 854.781  | 633.69 | 629.20 | 6118.76 | 391.09 | .111 | 353.40 | 9938.43  | 7326.65 | 123.18 | .45 | .3679 | 24.678 | .0000 |
| 864.781  | 633.25 | 628.89 | 6118.93 | 395.55 | .109 | 357.84 | 10257.38 | 7450.73 | 124.53 | .45 | .3679 | 24.669 | .0000 |
| 884.781  | 632.84 | 628.59 | 6119.08 | 380.73 | .108 | 362.28 | 10567.61 | 7576.32 | 126.06 | .46 | .3678 | 24.677 | .0000 |
| 894.781  | 632.46 | 628.30 | 6119.20 | 376.56 | .107 | 366.72 | 10869.13 | 7703.44 | 127.59 | .47 | .3678 | 24.682 | .0000 |
| 914.781  | 632.10 | 628.02 | 6119.31 | 372.98 | .106 | 371.16 | 11161.92 | 7832.09 | 129.13 | .48 | .3677 | 24.686 | .0000 |
| 924.781  | 631.75 | 627.74 | 6119.39 | 369.93 | .105 | 375.60 | 11446.00 | 7962.25 | 130.66 | .49 | .3676 | 24.689 | .0000 |
| 944.781  | 631.43 | 627.47 | 6119.47 | 367.38 | .104 | 380.04 | 11721.35 | 8093.94 | 132.19 | .50 | .3676 | 24.691 | .0000 |
| 954.781  | 631.12 | 627.21 | 6119.53 | 365.28 | .103 | 384.48 | 11987.99 | 8227.15 | 133.72 | .51 | .3675 | 24.693 | .0000 |
| 974.781  | 630.82 | 626.95 | 6119.58 | 363.59 | .103 | 388.92 | 12245.91 | 8361.89 | 135.25 | .52 | .3675 | 24.694 | .0000 |
| 984.781  | 630.54 | 626.70 | 6119.61 | 362.30 | .103 | 393.37 | 12495.11 | 8498.15 | 136.78 | .52 | .3674 | 24.694 | .0000 |
| 1004.781 | 630.26 | 626.44 | 6119.64 | 361.37 | .102 | 397.81 | 12735.59 | 8635.93 | 138.31 | .53 | .3673 | 24.693 | .0000 |
| 1014.781 | 630.00 | 626.19 | 6119.66 | 360.78 | .102 | 402.25 | 12967.36 | 8775.23 | 139.84 | .53 | .3673 | 24.693 | .0000 |
| 1034.781 | 629.74 | 625.95 | 6119.66 | 360.51 | .102 | 406.69 | 13190.40 | 8916.05 | 141.36 | .54 | .3672 | 24.692 | .0000 |
| 1040.791 | 629.64 | 625.85 | 6119.67 | 360.49 | .102 | 408.47 | 13277.32 | 8972.89 | 57.06  | .22 | .3671 | 24.690 | .0000 |
| 1055.791 | 629.41 | 625.60 | 6119.65 | 360.96 | .102 | 411.40 | 13475.95 | 9115.56 | 143.22 | .55 | .3671 | 24.688 | .0000 |
| 1070.791 | 629.18 | 625.36 | 6119.63 | 361.64 | .102 | 414.33 | 13668.11 | 9259.23 | 144.22 | .55 | .3670 | 24.683 | .0000 |
| 1044.171 | 628.98 | 625.15 | 6119.61 | 362.40 | .103 | 416.95 | 13834.06 | 9388.22 | 129.48 | .50 | .3669 | 24.679 | .0000 |
| AF1(A)   | 622.76 | 595.65 | 6084.49 | 976.63 | .277 | .....  | 15823.73 | 9481.29 | 94.02  | .67 | .3667 | 24.689 | ..... |
| AF1(B)   | 622.76 | 622.76 | 6121.35 | .01    | .000 | .....  | 10413.12 | .28     | .00    | .28 | .3664 | 20.670 | ..... |



| SLOT<br>INTERFACE<br>LOCATION          | PO        | PSIA      | P         | PSIA      | DEG. R    | T         | U         | AP      | DWDT   | AB      | RB     | DELTA<br>TAU<br>IN. | LB/SEC    | W/SLOT |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|--------|---------|--------|---------------------|-----------|--------|
|                                        |           |           |           |           |           |           | FT/SEC    | SQ. IN. | LB/SEC | SQ. IN. | IN/SEC |                     |           |        |
| FORWARD                                | 1.1676+02 | 6.3716+02 | 6.3700+02 | 6.3700+02 | 6.1246+03 | 4.0461+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000              | 1.2698+03 |        |
| AFT                                    | 1.1677+02 | 6.3716+02 | 6.3701+02 | 6.3701+02 | 6.1246+03 | 4.0461+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000              | 1.2695+03 |        |
| GAS BUILDUP IN SLOT, DW/DT = 1.5375-04 |           |           |           |           |           |           |           |         |        |         |        |                     |           |        |
| FORWARD                                | 4.2705+02 | 6.3599+02 | 6.3480+02 | 6.3480+02 | 6.1232+03 | 1.2147+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000              | 3.7818+03 |        |
| AFT                                    | 4.2706+02 | 6.3646+02 | 6.3527+02 | 6.3527+02 | 6.1239+03 | 1.2139+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000              | 3.7818+03 |        |
| GAS BUILDUP IN SLOT, DW/DT = 1.5459-04 |           |           |           |           |           |           |           |         |        |         |        |                     |           |        |
| FORWARD                                | 7.4634+02 | 6.3405+02 | 6.3057+02 | 6.3057+02 | 6.1201+03 | 2.0652+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000              | 6.3901+03 |        |
| AFT                                    | 7.4635+02 | 6.3529+02 | 6.3179+02 | 6.3179+02 | 6.1220+03 | 2.0618+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000              | 6.3901+03 |        |
| GAS BUILDUP IN SLOT, DW/DT = 1.5728-04 |           |           |           |           |           |           |           |         |        |         |        |                     |           |        |

IGNITION TIME, TIME (S)

69.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10994093.     | 2471570.4    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 11166339.     | 2510292.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 30069.062     | 8558.2655    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT                | .78206902+09  | .17501611+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.16244     | 257.16246    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT                | .82955794+09  | .18649204+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6240622     | 1.6240622    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4407.3133     | 9716.4626    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 326257.14     | 719273.87    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 20.431389     | 45.043503    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1378.9967     | 3040.1674    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 267.01294     | 413870.89    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 102.07637     | 6277901.1    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 179402.76     | 395515.37    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1156.0957     | 2548.7546    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597703     | 1.1597703    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMN                  | 12.855998     | 28.342625    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1560.0460     | 5118.2611    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .10570708     | .10570708    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .44836955+09  | 650.30505    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .35333448+11  | 51246.833    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 8.9952713     | 13942.698    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .94582370-02  | .37237154    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .67712022     | 26.650277    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 2.4416769     | 149003.27    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 52.662155     | 3213641.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3404.3388     | 6127.8098    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 256.24150     | 397175.12    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 100.35917     | 6124292.3    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 190.08592     | 11599754.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .43913653+09  | 636.91369    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .33230460+11  | 48196.708    |
| BURN AREA (M**2,IN**2)                     | AAN                  | 1.7761758     | 2753.0781    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .93876790-02  | .36959367    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .93808071-02  | .36932312    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .66444658     | 26.159314    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .75519809-01  | 4608.5015    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 16.973909     | 1035811.5    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3402.5963     | 6124.6733    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | A2A                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5657001     | 2426.8401    |
| EXPANSION RATIO                            | EPR                  | 6.8649895     | 6.8649895    |
| PRESSURE RATIO                             | PEPO                 | .22840373-01  | .22840373-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000    |

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INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | PSIA    | P      | T    | U      | M        | LP      | INCHES | SQ. IN. | WDOT  | LB/SEC | DWDOT | DM/DT | RB     | TAU   | RBTO   | TAUTO |
|-----------------------------|--------|---------|--------|------|--------|----------|---------|--------|---------|-------|--------|-------|-------|--------|-------|--------|-------|
|                             | PSIA   | DEG. R  | FT/SEC |      |        |          |         |        |         |       |        |       |       | IN/SEC | IN.   | IN/SEC | IN.   |
| FURE                        | 650.31 | 6127.81 | 17.42  | .005 | 347.92 | 9628.41  | 326.21  | 329.23 | 3.02    | .3722 | 26.658 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 15.000                      | 650.29 | 6127.80 | 23.93  | .007 | 348.18 | 9643.61  | 449.08  | 123.28 | .41     | .3722 | 26.622 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 30.000                      | 650.28 | 6127.79 | 30.44  | .039 | 348.44 | 9658.78  | 572.04  | 123.37 | .41     | .3722 | 26.617 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 45.000                      | 650.27 | 6127.77 | 36.93  | .010 | 348.71 | 9673.94  | 695.09  | 123.46 | .41     | .3721 | 26.613 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 60.000                      | 650.26 | 6127.75 | 43.41  | .012 | 348.97 | 9689.08  | 818.23  | 123.55 | .41     | .3721 | 26.608 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 75.000                      | 650.24 | 6127.72 | 49.87  | .014 | 349.23 | 9704.20  | 941.47  | 123.65 | .41     | .3721 | 26.603 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 90.000                      | 650.22 | 6127.70 | 56.32  | .016 | 349.50 | 9719.31  | 1064.79 | 123.74 | .41     | .3721 | 26.598 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 105.000                     | 650.20 | 6127.67 | 62.75  | .018 | 349.76 | 9734.40  | 1188.21 | 123.83 | .41     | .3721 | 26.593 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 116.761                     | 650.18 | 6127.64 | 67.79  | .019 | 349.96 | 9749.52  | 1285.04 | 97.15  | .32     | .3721 | 26.588 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 116.771                     | 650.18 | 6127.65 | 66.95  | .019 | 323.38 | 9868.25  | 1285.04 | .00    | .00     | .3721 | 26.589 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 131.771                     | 650.16 | 6127.61 | 73.73  | .021 | 337.61 | 9774.77  | 1401.69 | 117.05 | .40     | .3721 | 26.589 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 143.919                     | 650.14 | 6127.57 | 79.52  | .023 | 349.14 | 9699.00  | 1499.84 | 98.48  | .33     | .3721 | 26.582 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 156.919                     | 650.11 | 6127.53 | 85.68  | .024 | 350.07 | 9742.86  | 1623.24 | 123.81 | .41     | .3721 | 26.577 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 169.919                     | 650.07 | 6127.49 | 91.81  | .026 | 351.00 | 9786.57  | 1746.96 | 124.13 | .41     | .3721 | 26.571 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 182.919                     | 650.04 | 6127.45 | 97.90  | .028 | 351.92 | 9830.14  | 1871.00 | 124.46 | .41     | .3721 | 26.565 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 195.919                     | 650.00 | 6127.40 | 103.96 | .029 | 352.85 | 9873.56  | 1995.37 | 124.78 | .42     | .3720 | 26.559 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 208.919                     | 649.95 | 6127.35 | 109.99 | .031 | 353.78 | 9916.83  | 2120.05 | 125.11 | .42     | .3720 | 26.554 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 221.919                     | 649.91 | 6127.29 | 115.98 | .033 | 354.71 | 9959.95  | 2245.07 | 125.43 | .42     | .3720 | 26.548 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 234.919                     | 649.86 | 6127.24 | 121.95 | .035 | 355.64 | 10002.92 | 2370.40 | 125.75 | .42     | .3720 | 26.542 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 247.919                     | 649.81 | 6127.18 | 127.88 | .036 | 356.57 | 10045.74 | 2496.05 | 126.08 | .42     | .3720 | 26.536 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 260.919                     | 649.75 | 6127.12 | 133.79 | .038 | 357.50 | 10088.42 | 2622.03 | 126.40 | .42     | .3720 | 26.529 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 273.919                     | 649.70 | 6127.06 | 139.66 | .040 | 358.43 | 10130.94 | 2748.33 | 126.72 | .42     | .3719 | 26.523 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 286.919                     | 649.64 | 6126.99 | 145.51 | .041 | 359.36 | 10173.32 | 2874.94 | 127.04 | .42     | .3719 | 26.517 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 299.919                     | 649.58 | 6126.92 | 151.33 | .043 | 360.28 | 10215.55 | 3001.88 | 127.36 | .43     | .3719 | 26.510 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 312.919                     | 649.51 | 6126.85 | 157.13 | .044 | 361.21 | 10257.63 | 3129.14 | 127.68 | .43     | .3719 | 26.504 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 325.919                     | 649.45 | 6126.78 | 162.90 | .046 | 362.14 | 10299.57 | 3256.72 | 128.01 | .43     | .3719 | 26.497 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 338.919                     | 649.38 | 6126.71 | 168.64 | .048 | 363.07 | 10341.35 | 3384.61 | 128.33 | .43     | .3718 | 26.491 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 351.919                     | 649.31 | 6126.63 | 174.36 | .049 | 364.00 | 10382.99 | 3512.83 | 128.65 | .43     | .3718 | 26.484 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 364.919                     | 649.23 | 6126.55 | 180.06 | .051 | 364.93 | 10424.47 | 3641.36 | 128.97 | .43     | .3718 | 26.477 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 377.919                     | 649.16 | 6126.47 | 185.72 | .053 | 365.86 | 10465.87 | 3769.80 | 129.28 | .43     | .3717 | 26.470 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 390.919                     | 649.08 | 6126.39 | 191.42 | .055 | 366.79 | 10507.16 | 3898.24 | 129.59 | .43     | .3717 | 26.463 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 403.919                     | 649.01 | 6126.31 | 197.14 | .057 | 367.72 | 10548.41 | 4026.67 | 129.90 | .42     | .3717 | 26.456 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 416.919                     | 648.94 | 6126.23 | 202.86 | .059 | 368.65 | 10589.61 | 4155.10 | 130.21 | .42     | .3717 | 26.449 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 429.919                     | 648.86 | 6126.15 | 208.58 | .061 | 369.58 | 10630.76 | 4283.53 | 130.52 | .42     | .3717 | 26.442 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 442.919                     | 648.79 | 6126.07 | 214.30 | .063 | 370.51 | 10671.86 | 4411.96 | 130.83 | .42     | .3717 | 26.435 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 455.919                     | 648.71 | 6125.99 | 220.02 | .065 | 371.44 | 10712.91 | 4540.39 | 131.14 | .42     | .3717 | 26.428 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 468.919                     | 648.64 | 6125.91 | 225.74 | .067 | 372.37 | 10753.91 | 4668.82 | 131.45 | .42     | .3717 | 26.421 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 481.919                     | 648.56 | 6125.83 | 231.46 | .069 | 373.30 | 10794.86 | 4797.25 | 131.76 | .42     | .3717 | 26.414 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 494.919                     | 648.48 | 6125.75 | 237.18 | .071 | 374.23 | 10835.76 | 4925.68 | 132.07 | .42     | .3717 | 26.407 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 507.919                     | 648.40 | 6125.67 | 242.90 | .073 | 375.16 | 10876.61 | 5054.11 | 132.38 | .42     | .3717 | 26.400 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 520.919                     | 648.32 | 6125.59 | 248.62 | .075 | 376.09 | 10917.41 | 5182.54 | 132.69 | .42     | .3717 | 26.393 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 533.919                     | 648.24 | 6125.51 | 254.34 | .077 | 377.02 | 10958.16 | 5310.97 | 133.00 | .42     | .3717 | 26.386 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 546.919                     | 648.16 | 6125.43 | 260.06 | .079 | 377.95 | 11000.00 | 5439.40 | 133.31 | .42     | .3717 | 26.379 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 559.919                     | 648.08 | 6125.35 | 265.78 | .081 | 378.88 | 11041.79 | 5567.83 | 133.62 | .42     | .3717 | 26.372 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 572.919                     | 648.00 | 6125.27 | 271.50 | .083 | 379.81 | 11083.53 | 5696.26 | 133.93 | .42     | .3717 | 26.365 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 585.919                     | 647.92 | 6125.19 | 277.22 | .085 | 380.74 | 11125.22 | 5824.69 | 134.24 | .42     | .3717 | 26.358 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 598.919                     | 647.84 | 6125.11 | 282.94 | .087 | 381.67 | 11166.86 | 5953.12 | 134.55 | .42     | .3717 | 26.351 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 611.919                     | 647.76 | 6125.03 | 288.66 | .089 | 382.60 | 11208.45 | 6081.55 | 134.86 | .42     | .3717 | 26.344 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 624.919                     | 647.68 | 6124.95 | 294.38 | .091 | 383.53 | 11250.00 | 6210.00 | 135.17 | .42     | .3717 | 26.337 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 637.919                     | 647.60 | 6124.87 | 300.10 | .093 | 384.46 | 11291.50 | 6338.43 | 135.48 | .42     | .3717 | 26.330 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 650.919                     | 647.52 | 6124.79 | 305.82 | .095 | 385.39 | 11333.00 | 6466.86 | 135.79 | .42     | .3717 | 26.323 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 663.919                     | 647.44 | 6124.71 | 311.54 | .097 | 386.32 | 11374.45 | 6595.29 | 136.10 | .42     | .3717 | 26.316 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 676.919                     | 647.36 | 6124.63 | 317.26 | .099 | 387.25 | 11415.86 | 6723.72 | 136.41 | .42     | .3717 | 26.309 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 689.919                     | 647.28 | 6124.55 | 322.98 | .101 | 388.18 | 11457.22 | 6852.15 | 136.72 | .42     | .3717 | 26.302 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 702.919                     | 647.20 | 6124.47 | 328.70 | .103 | 389.11 | 11498.53 | 6980.58 | 137.03 | .42     | .3717 | 26.295 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 715.919                     | 647.12 | 6124.39 | 334.42 | .105 | 390.04 | 11539.80 | 7109.01 | 137.34 | .42     | .3717 | 26.288 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 728.919                     | 647.04 | 6124.31 | 340.14 | .107 | 390.97 | 11581.00 | 7237.44 | 137.65 | .42     | .3717 | 26.281 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 741.919                     | 646.96 | 6124.23 | 345.86 | .109 | 391.90 | 11622.16 | 7365.87 | 137.96 | .42     | .3717 | 26.274 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 754.919                     | 646.88 | 6124.15 | 351.58 | .111 | 392.83 | 11663.27 | 7494.30 | 138.27 | .42     | .3717 | 26.267 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 767.919                     | 646.80 | 6124.07 | 357.30 | .113 | 393.76 | 11704.33 | 7622.73 | 138.58 | .42     | .3717 | 26.260 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 780.919                     | 646.72 | 6123.99 | 363.02 | .115 | 394.69 | 11745.34 | 7751.16 | 138.89 | .42     | .3717 | 26.253 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 793.919                     | 646.64 | 6123.91 | 368.74 | .117 | 395.62 | 11786.30 | 7879.59 | 139.20 | .42     | .3717 | 26.246 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 806.919                     | 646.56 | 6123.83 | 374.46 | .119 | 396.55 | 11827.22 | 8008.02 | 139.51 | .42     | .3717 | 26.239 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |
| 819.919                     | 646.48 | 6123.75 | 380.18 | .121 | 397.48 | 11868.19 | 8136.45 | 139.82 | .42     | .3717 | 26.232 | .0000 | .0000 | .0000  | .0000 | .0000  | .0000 |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 620.204  | 648.44 | 645.93 | 6124.55 | 288.60 | .082 | 354.28 | 9993.07  | 5576.80 | 125.11 | .42 | .3713 | 26.305 | .0000 | .000  |
| 643.204  | 648.31 | 645.71 | 6124.42 | 294.21 | .083 | 354.86 | 10025.40 | 5701.68 | 125.30 | .42 | .3713 | 26.296 | .0000 | .000  |
| 658.204  | 648.18 | 645.48 | 6124.29 | 299.80 | .085 | 355.44 | 10057.64 | 5826.75 | 125.49 | .42 | .3712 | 26.286 | .0000 | .000  |
| 673.204  | 648.05 | 645.24 | 6124.16 | 305.38 | .086 | 356.02 | 10089.78 | 5952.01 | 125.68 | .42 | .3712 | 26.276 | .0000 | .000  |
| 688.204  | 647.91 | 645.00 | 6124.03 | 310.94 | .088 | 356.60 | 10121.82 | 6077.45 | 125.87 | .42 | .3711 | 26.267 | .0000 | .000  |
| 703.204  | 647.77 | 644.76 | 6123.89 | 316.48 | .090 | 357.18 | 10153.77 | 6203.09 | 126.06 | .42 | .3711 | 26.257 | .0000 | .000  |
| 718.204  | 647.63 | 644.51 | 6123.75 | 322.00 | .091 | 357.75 | 10185.63 | 6328.91 | 126.24 | .42 | .3710 | 26.247 | .0000 | .000  |
| 724.191  | 647.55 | 644.38 | 6123.68 | 324.94 | .092 | 358.06 | 10202.55 | 6395.98 | 67.30  | .23 | .3710 | 26.237 | .0000 | .000  |
| 741.191  | 647.35 | 644.13 | 6123.60 | 327.83 | .093 | 360.05 | 10316.37 | 6522.33 | 126.78 | .43 | .3710 | 26.232 | .0000 | .000  |
| 746.336  | 647.29 | 644.04 | 6123.58 | 328.82 | .093 | 360.73 | 10355.17 | 6565.82 | 43.64  | .15 | .3709 | 26.227 | .0000 | .000  |
| 746.346  | 647.12 | 645.18 | 6125.28 | 254.28 | .072 | 435.41 | 13370.40 | 6565.82 | .00    | .00 | .3711 | 26.273 | .0000 | .000  |
| 761.346  | 647.36 | 645.00 | 6124.74 | 280.32 | .079 | 411.69 | 12406.41 | 6714.91 | 149.61 | .52 | .3711 | 26.274 | .0000 | .000  |
| 776.346  | 647.69 | 644.80 | 6124.04 | 310.47 | .088 | 387.98 | 11438.56 | 6855.66 | 141.23 | .48 | .3711 | 26.249 | .0000 | .000  |
| 791.346  | 648.17 | 644.57 | 6123.13 | 345.90 | .098 | 364.27 | 10467.25 | 6968.03 | 132.84 | .46 | .3711 | 26.220 | .0000 | .000  |
| 809.831  | 648.30 | 644.51 | 6122.87 | 355.06 | .101 | 358.76 | 10241.08 | 7017.59 | 29.66  | .10 | .3710 | 26.185 | .0000 | .000  |
| 824.831  | 647.94 | 643.95 | 6122.62 | 364.13 | .103 | 359.73 | 10297.96 | 7144.00 | 126.85 | .44 | .3710 | 26.180 | .0000 | .000  |
| 839.831  | 647.75 | 643.67 | 6122.49 | 368.65 | .104 | 360.71 | 10354.52 | 7270.75 | 127.18 | .44 | .3709 | 26.171 | .0000 | .000  |
| 854.781  | 647.57 | 643.39 | 6122.36 | 373.14 | .106 | 361.69 | 10410.77 | 7397.81 | 127.51 | .44 | .3709 | 26.162 | .0000 | .000  |
| 869.781  | 647.17 | 643.10 | 6122.50 | 368.07 | .104 | 362.66 | 10466.52 | 7524.78 | 127.41 | .44 | .3708 | 26.153 | .0000 | .000  |
| 884.781  | 646.75 | 642.82 | 6122.63 | 363.69 | .103 | 367.10 | 10796.56 | 7653.10 | 128.77 | .45 | .3708 | 26.144 | .0000 | .000  |
| 899.781  | 646.43 | 642.55 | 6122.74 | 359.93 | .102 | 371.54 | 11117.06 | 7782.96 | 130.32 | .46 | .3707 | 26.151 | .0000 | .000  |
| 914.781  | 646.10 | 642.28 | 6122.83 | 356.72 | .101 | 375.98 | 11428.03 | 7914.35 | 131.86 | .47 | .3707 | 26.156 | .0000 | .000  |
| 929.781  | 645.78 | 642.03 | 6122.90 | 354.02 | .100 | 380.42 | 11729.47 | 8047.28 | 133.41 | .48 | .3706 | 26.160 | .0000 | .000  |
| 944.781  | 645.48 | 641.77 | 6122.96 | 351.79 | .100 | 384.86 | 12021.36 | 8181.75 | 134.95 | .49 | .3705 | 26.163 | .0000 | .000  |
| 959.731  | 645.19 | 641.53 | 6123.01 | 349.98 | .099 | 389.30 | 12303.73 | 8317.74 | 136.49 | .50 | .3705 | 26.165 | .0000 | .000  |
| 974.781  | 644.92 | 641.28 | 6123.05 | 348.58 | .099 | 393.74 | 12576.56 | 8455.28 | 138.04 | .50 | .3704 | 26.166 | .0000 | .000  |
| 989.781  | 644.65 | 641.04 | 6123.08 | 347.55 | .098 | 398.18 | 12839.85 | 8594.35 | 139.58 | .51 | .3703 | 26.167 | .0000 | .000  |
| 1004.781 | 644.40 | 640.80 | 6123.10 | 346.87 | .098 | 402.62 | 13093.61 | 8734.95 | 141.12 | .52 | .3703 | 26.167 | .0000 | .000  |
| 1019.781 | 644.16 | 640.57 | 6123.11 | 346.51 | .098 | 407.06 | 13337.84 | 8877.08 | 142.65 | .52 | .3702 | 26.166 | .0000 | .000  |
| 1034.781 | 643.92 | 640.33 | 6123.11 | 346.47 | .098 | 411.50 | 13572.53 | 9020.74 | 144.18 | .53 | .3701 | 26.165 | .0000 | .000  |
| 1049.791 | 643.83 | 640.24 | 6123.11 | 346.54 | .098 | 415.94 | 13797.69 | 9165.93 | 145.72 | .53 | .3700 | 26.163 | .0000 | .000  |
| 1055.791 | 643.61 | 640.01 | 6123.09 | 347.10 | .098 | 417.72 | 13885.22 | 9224.53 | 58.81  | .21 | .3700 | 26.162 | .0000 | .000  |
| 1070.791 | 643.39 | 639.78 | 6123.07 | 347.87 | .099 | 420.65 | 14088.60 | 9371.59 | 147.63 | .54 | .3700 | 26.159 | .0000 | .000  |
| 1084.171 | 643.20 | 639.58 | 6123.05 | 348.71 | .099 | 423.58 | 14284.96 | 9519.68 | 148.63 | .54 | .3700 | 26.155 | .0000 | .000  |
| 1111.171 | 636.92 | 609.05 | 6087.68 | 979.16 | .278 | 426.19 | 14454.20 | 9652.65 | 133.46 | .49 | .3700 | 26.150 | .0000 | .000  |
| 1111.171 | 636.91 | 636.91 | 6124.67 | .01    | .000 | .....  | 15823.73 | 9716.46 | 64.56  | .53 | .3696 | 26.159 | ....  | ..... |
| 1111.171 | 636.91 | 636.91 | 6124.67 | .01    | .000 | .....  | 10413.12 | .....   | .00    | .22 | .3693 | 20.670 | ....  | ..... |

| SLOT<br>INTERFACE<br>LOCATION          | PO        | P         | T         | U         | AP        | DWDT      | AB      | RD     | DELTA<br>TAU<br>IN. | MSLOT     |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|--------|---------------------|-----------|
| IN.                                    | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC    | SQ. IN. | IN/SEC |                     | LB/SEC    |
| FORWARD                                | 1.1676+02 | 6.5018+02 | 6.5054+02 | 6.1276+03 | 4.0139+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000              | 1.2850+03 |
| AFT                                    | 1.1677+02 | 6.5019+02 | 6.5005+02 | 6.1276+03 | 4.0139+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000              | 1.2850+03 |
| GAS BUILDUP IN SLOT, DW/DT = 1.1114-04 |           |           |           |           |           |           |         |        |                     |           |
| FORWARD                                | 4.2705+02 | 6.4910+02 | 6.4799+02 | 6.1244+03 | 1.2219+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000              | 3.8820+03 |
| AFT                                    | 4.2706+02 | 6.4953+02 | 6.4842+02 | 6.1270+03 | 1.2212+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000              | 3.8820+03 |
| GAS BUILDUP IN SLOT, DW/DT = 1.1193-04 |           |           |           |           |           |           |         |        |                     |           |
| FORWARD                                | 7.4634+02 | 6.4729+02 | 6.4404+02 | 6.1236+03 | 2.0784+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000              | 6.5658+03 |
| AFT                                    | 7.4635+02 | 6.4843+02 | 6.4518+02 | 6.1253+03 | 2.0753+02 | 1.6383+04 | 0.0000  | 0.0000 | 0.0000              | 6.5658+03 |
| GAS BUILDUP IN SLOT, DW/DT = 1.1456-04 |           |           |           |           |           |           |         |        |                     |           |

IGNITION TIME, TIME (S) 73.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 11215731.     | 2521396.6    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 11351960.     | 2552022.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 41874.148     | 9413.6830    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .82649395*09  | .18580323*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.11501     | 257.11501    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .87459826*09  | .19661751*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6241792     | 1.6241792    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4479.7954     | 9876.0601    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 344032.67     | 758462.21    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 22.473552     | 49.545700    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1291.2188     | 2846.6501    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 270.03304     | 418552.05    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 92.697080     | 5656722.9    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 161564.60     | 356188.96    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1217.6505     | 2684.4598    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597789     | 1.1597789    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.857596     | 28.346148    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1560.1705     | 5118.6697    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .10076327     | .10076327    |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .45429315*09  | 658.89651    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .37138921*11  | 53865.451    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 8.4838201     | 13149.948    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .95018052*02  | .37408682    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .71499791     | 28.149524    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 2.1108959     | 128814.47    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 52.992941     | 3233827.7    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3405.4619     | 6129.8313    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 260.60600     | 403940.11    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 90.561805     | 5526420.4    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 199.88352     | 12197641.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .44539662*09  | 645.99318    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .34999687*11  | 50762.755    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .94322576     | 1462.0029    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NT+1,1)          | .94460467*02  | .37189160    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NT+2,1)          | .94385954*02  | .37159825    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NT+1,1)         | .70205358     | 27.639905    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NT+2,1)         | .52501800     | 20.670900    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .24385525*01  | 1488.0960    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.025043     | 1038931.9    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NT+2,3)         | 3403.7812     | 6126.8061    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5692423     | 2432.3304    |
| EXPANSION RATIO                            | EPR                  | 6.8494935     | 6.8494935    |
| PRESSURE RATIO                             | PEPO                 | .22907780*01  | .22907780*01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250*01  | .37810250*01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PC     | P      | PSIA    | DEG. R | T    | U      | M        | LP      | INCHES | SQ. IN. | WDOT   | DWDOT  | LB/SEC | DW/DT | RB     | TAU  | IN/SEC | RBTD | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|---------|--------|--------|--------|-------|--------|------|--------|------|-------|
|                             | PSIA   |        |         |        |      | FT/SEC |          |         |        |         | LB/SEC | LB/SEC | LB/SEC |       | IN/SEC | IN.  | IN/SEC |      | IN.   |
| FORE                        | 658.90 | 658.88 | 6129.83 | 15.47  | .004 | 357.24 | 10153.80 | 309.43  | 311.95 | 2.51    | .3739  | 28.150 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 15.000                      | 658.88 | 658.87 | 6129.82 | 21.76  | .036 | 357.51 | 10169.47 | 436.19  | 127.16 | .41     | .3739  | 28.112 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 30.000                      | 658.88 | 658.85 | 6129.81 | 28.05  | .008 | 357.77 | 10185.04 | 563.04  | 127.26 | .41     | .3739  | 28.108 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 45.000                      | 658.87 | 658.83 | 6129.79 | 34.32  | .010 | 358.04 | 10200.59 | 689.99  | 127.35 | .41     | .3739  | 28.103 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 60.000                      | 658.85 | 658.80 | 6129.78 | 40.58  | .011 | 358.31 | 10216.12 | 817.03  | 127.45 | .41     | .3739  | 28.098 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 75.000                      | 658.84 | 658.77 | 6129.75 | 46.83  | .013 | 358.58 | 10231.63 | 944.17  | 127.54 | .41     | .3739  | 28.094 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 90.000                      | 658.82 | 658.74 | 6129.73 | 53.06  | .015 | 358.85 | 10247.12 | 1071.39 | 127.63 | .41     | .3738  | 28.089 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 105.000                     | 658.80 | 658.70 | 6129.70 | 59.28  | .017 | 359.11 | 10262.63 | 1198.71 | 127.73 | .41     | .3738  | 28.084 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 116.761                     | 658.79 | 658.66 | 6129.68 | 64.14  | .018 | 359.32 | 10274.72 | 1298.60 | 100.21 | .32     | .3738  | 28.079 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 116.771                     | 658.79 | 658.66 | 6129.68 | 63.66  | .018 | 327.73 | 10353.35 | 1298.60 | .00    | .00     | .3738  | 28.080 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 131.771                     | 658.77 | 658.62 | 6129.65 | 69.98  | .020 | 344.71 | 10283.13 | 1417.84 | 119.62 | .39     | .3738  | 28.080 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 143.919                     | 658.75 | 658.57 | 6129.62 | 75.39  | .021 | 350.46 | 10226.21 | 1518.82 | 101.30 | .33     | .3738  | 28.072 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 156.919                     | 658.72 | 658.51 | 6129.58 | 81.35  | .023 | 359.39 | 10271.54 | 1646.11 | 127.70 | .41     | .3738  | 28.067 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 173.919                     | 658.68 | 658.45 | 6129.54 | 87.28  | .025 | 360.32 | 10316.71 | 1773.72 | 128.02 | .41     | .3738  | 28.061 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 184.919                     | 658.65 | 658.38 | 6129.50 | 93.18  | .026 | 361.25 | 10361.72 | 1901.66 | 128.35 | .41     | .3738  | 28.055 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 203.919                     | 658.61 | 658.31 | 6129.46 | 99.05  | .028 | 362.18 | 10406.57 | 2029.93 | 128.68 | .41     | .3738  | 28.049 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 214.919                     | 658.57 | 658.24 | 6129.41 | 104.89 | .030 | 363.11 | 10451.25 | 2158.52 | 129.00 | .41     | .3738  | 28.044 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 233.719                     | 658.53 | 658.15 | 6129.36 | 110.69 | .031 | 364.04 | 10495.77 | 2287.44 | 129.33 | .41     | .3737  | 28.038 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 246.919                     | 658.48 | 658.07 | 6129.31 | 116.46 | .033 | 364.97 | 10540.13 | 2416.68 | 129.66 | .42     | .3737  | 28.031 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 263.919                     | 658.44 | 657.98 | 6129.25 | 122.21 | .035 | 365.90 | 10584.33 | 2546.24 | 129.98 | .42     | .3737  | 28.025 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 274.919                     | 658.39 | 657.89 | 6129.20 | 127.93 | .036 | 366.84 | 10628.36 | 2676.13 | 130.31 | .42     | .3737  | 28.019 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 293.919                     | 658.33 | 657.79 | 6129.14 | 133.62 | .038 | 367.77 | 10672.23 | 2806.35 | 130.63 | .42     | .3737  | 28.013 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 306.919                     | 658.28 | 657.69 | 6129.08 | 139.29 | .039 | 368.70 | 10715.94 | 2936.88 | 130.96 | .42     | .3737  | 28.006 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 323.919                     | 658.22 | 657.58 | 6129.02 | 144.93 | .041 | 369.63 | 10759.49 | 3067.74 | 131.28 | .42     | .3736  | 28.000 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 336.919                     | 658.16 | 657.47 | 6128.95 | 150.54 | .043 | 370.56 | 10802.87 | 3198.93 | 131.61 | .42     | .3736  | 27.993 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 353.919                     | 658.10 | 657.36 | 6128.88 | 156.13 | .044 | 371.49 | 10846.09 | 3330.43 | 131.93 | .42     | .3736  | 27.986 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 368.919                     | 658.04 | 657.24 | 6128.81 | 161.70 | .046 | 372.42 | 10889.13 | 3462.26 | 132.25 | .43     | .3736  | 27.980 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 383.919                     | 657.97 | 657.11 | 6128.74 | 167.24 | .047 | 373.35 | 10932.05 | 3594.41 | 132.58 | .43     | .3735  | 27.973 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 396.919                     | 657.90 | 656.99 | 6128.67 | 172.76 | .049 | 374.28 | 10974.78 | 3726.88 | 132.90 | .43     | .3735  | 27.966 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 413.046                     | 657.88 | 656.95 | 6128.65 | 174.27 | .049 | 374.54 | 10986.52 | 3763.40 | 36.64  | .12     | .3735  | 27.959 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 418.048                     | 657.82 | 656.82 | 6128.56 | 180.44 | .051 | 372.68 | 10986.26 | 3895.78 | 132.81 | .43     | .3735  | 27.957 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 427.051                     | 657.78 | 656.74 | 6128.51 | 184.13 | .052 | 371.56 | 10986.34 | 3974.91 | 79.39  | .26     | .3735  | 27.951 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 427.061                     | 657.71 | 657.13 | 6129.10 | 137.08 | .039 | 356.55 | 14749.55 | 3974.91 | .00    | .00     | .3735  | 27.976 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 442.061                     | 657.86 | 657.06 | 6128.81 | 161.69 | .046 | 356.83 | 12902.59 | 4101.27 | 126.80 | .45     | .3735  | 27.976 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 457.061                     | 658.14 | 656.96 | 6128.33 | 196.03 | .056 | 357.11 | 10971.33 | 4227.74 | 126.90 | .43     | .3735  | 27.948 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 463.204                     | 658.31 | 656.90 | 6128.04 | 214.37 | .061 | 357.22 | 10156.07 | 4279.57 | 52.00  | .17     | .3735  | 27.907 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 479.204                     | 658.22 | 656.74 | 6127.94 | 223.03 | .062 | 357.83 | 10190.34 | 4406.24 | 127.08 | .41     | .3735  | 27.887 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 493.204                     | 658.12 | 656.56 | 6127.84 | 225.66 | .064 | 358.38 | 10224.50 | 4533.11 | 127.28 | .41     | .3734  | 27.878 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 508.204                     | 658.02 | 656.39 | 6127.74 | 231.28 | .065 | 358.96 | 10258.56 | 4660.18 | 127.48 | .41     | .3734  | 27.868 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 523.204                     | 657.92 | 656.21 | 6127.64 | 236.87 | .067 | 359.54 | 10292.51 | 4787.44 | 127.67 | .41     | .3734  | 27.859 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 538.204                     | 657.82 | 656.02 | 6127.53 | 242.44 | .069 | 360.12 | 10326.35 | 4914.90 | 127.86 | .41     | .3733  | 27.850 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 553.204                     | 657.71 | 655.84 | 6127.43 | 248.00 | .070 | 360.70 | 10360.09 | 5042.54 | 128.06 | .41     | .3733  | 27.841 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 568.204                     | 657.61 | 655.64 | 6127.32 | 253.53 | .072 | 361.28 | 10393.72 | 5170.39 | 128.25 | .41     | .3733  | 27.831 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 583.204                     | 657.50 | 655.45 | 6127.21 | 259.05 | .073 | 361.86 | 10427.25 | 5298.42 | 128.45 | .41     | .3732  | 27.822 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 598.204                     | 657.38 | 655.25 | 6127.09 | 264.54 | .075 | 362.45 | 10460.67 | 5426.64 | 128.64 | .41     | .3732  | 27.812 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |
| 613.204                     | 657.27 | 655.05 | 6126.98 | 270.02 | .076 | 363.03 | 10493.98 | 5555.04 | 128.83 | .41     | .3732  | 27.802 | .0000  | .000  | .000   | .000 | .000   | .000 | .000  |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|
| 629.204  | 657.15 | 654.84 | 6126.86 | 275.49 | .076 | 363.61 | 10527.19 | 5683.67 | 129.02 | .41 | .3731 | 27.793 | .0000 |
| 643.204  | 657.03 | 654.63 | 6126.74 | 280.93 | .080 | 364.19 | 10560.29 | 5812.47 | 129.22 | .42 | .3731 | 27.783 | .0000 |
| 650.204  | 656.91 | 654.41 | 6126.62 | 286.36 | .081 | 364.77 | 10593.39 | 5941.46 | 129.41 | .42 | .3730 | 27.773 | .0000 |
| 673.204  | 656.79 | 654.19 | 6126.50 | 291.77 | .083 | 365.35 | 10626.48 | 6070.64 | 129.60 | .42 | .3730 | 27.763 | .0000 |
| 688.204  | 656.66 | 653.97 | 6126.37 | 297.17 | .084 | 365.93 | 10659.56 | 6200.02 | 129.79 | .42 | .3729 | 27.753 | .0000 |
| 703.204  | 656.53 | 653.74 | 6126.25 | 302.55 | .086 | 366.51 | 10692.64 | 6329.58 | 129.98 | .42 | .3729 | 27.743 | .0000 |
| 718.204  | 656.40 | 653.51 | 6126.12 | 307.92 | .087 | 367.09 | 10724.71 | 6459.33 | 130.17 | .42 | .3729 | 27.733 | .0000 |
| 720.191  | 656.33 | 653.39 | 6126.05 | 310.77 | .088 | 367.40 | 10741.51 | 6528.49 | 69.39  | .22 | .3728 | 27.723 | .0000 |
| 741.191  | 656.14 | 653.15 | 6125.98 | 313.67 | .089 | 369.38 | 10858.22 | 6658.78 | 130.71 | .42 | .3728 | 27.718 | .0000 |
| 746.336  | 656.08 | 653.07 | 6125.95 | 314.67 | .089 | 370.06 | 10897.99 | 6703.63 | 44.99  | .15 | .3727 | 27.713 | .0000 |
| 746.346  | 655.93 | 654.10 | 6127.48 | 245.07 | .069 | 376.69 | 13974.34 | 6703.63 | .00    | .00 | .3729 | 27.760 | .0000 |
| 761.346  | 656.16 | 653.96 | 6127.30 | 268.89 | .076 | 374.02 | 12990.37 | 6836.39 | 133.23 | .46 | .3729 | 27.760 | .0000 |
| 776.346  | 656.47 | 653.79 | 6126.39 | 296.68 | .084 | 371.34 | 12022.86 | 6968.21 | 132.27 | .45 | .3729 | 27.736 | .0000 |
| 791.346  | 656.89 | 653.58 | 6125.58 | 329.51 | .093 | 368.67 | 11011.82 | 7099.09 | 131.31 | .43 | .3729 | 27.706 | .0000 |
| 794.031  | 657.01 | 653.53 | 6125.36 | 338.01 | .096 | 368.04 | 10781.06 | 7129.36 | 30.37  | .10 | .3728 | 27.671 | .0000 |
| 809.831  | 656.84 | 653.27 | 6125.24 | 342.47 | .097 | 369.03 | 10839.38 | 7259.70 | 130.77 | .42 | .3728 | 27.666 | .0000 |
| 824.831  | 656.67 | 653.01 | 6125.12 | 346.91 | .098 | 370.02 | 10897.35 | 7390.39 | 131.11 | .42 | .3728 | 27.657 | .0000 |
| 839.831  | 656.50 | 652.75 | 6124.99 | 351.34 | .100 | 371.01 | 10954.98 | 7521.40 | 131.44 | .42 | .3727 | 27.647 | .0000 |
| 854.781  | 656.33 | 652.48 | 6124.87 | 355.74 | .101 | 372.00 | 11012.08 | 7652.31 | 131.33 | .42 | .3727 | 27.638 | .0000 |
| 869.781  | 655.96 | 652.21 | 6125.00 | 351.16 | .099 | 376.43 | 11353.35 | 7784.59 | 132.71 | .43 | .3726 | 27.629 | .0000 |
| 884.781  | 655.62 | 651.95 | 6125.11 | 347.23 | .098 | 380.87 | 11684.26 | 7918.42 | 134.27 | .44 | .3725 | 27.636 | .0000 |
| 899.781  | 655.29 | 651.70 | 6125.20 | 343.87 | .097 | 385.31 | 12024.79 | 8053.79 | 135.82 | .45 | .3725 | 27.641 | .0000 |
| 914.781  | 654.98 | 651.45 | 6125.27 | 341.04 | .097 | 384.75 | 12314.96 | 8193.70 | 137.37 | .46 | .3724 | 27.644 | .0000 |
| 929.781  | 654.69 | 651.21 | 6125.34 | 338.70 | .096 | 394.19 | 12614.75 | 8329.15 | 138.92 | .47 | .3724 | 27.647 | .0000 |
| 944.781  | 654.41 | 650.97 | 6125.39 | 336.79 | .095 | 398.62 | 12904.18 | 8469.15 | 140.47 | .47 | .3723 | 27.648 | .0000 |
| 959.781  | 654.15 | 650.74 | 6125.43 | 335.29 | .095 | 403.06 | 13183.24 | 8610.69 | 142.02 | .48 | .3722 | 27.649 | .0000 |
| 974.781  | 653.90 | 650.51 | 6125.46 | 334.17 | .095 | 407.50 | 13451.93 | 8753.76 | 143.56 | .49 | .3721 | 27.650 | .0000 |
| 989.781  | 653.65 | 650.28 | 6125.48 | 333.41 | .094 | 411.94 | 13710.25 | 8898.37 | 145.10 | .49 | .3721 | 27.649 | .0000 |
| 1004.781 | 653.42 | 650.06 | 6125.49 | 332.98 | .094 | 416.38 | 13958.20 | 9044.52 | 146.64 | .50 | .3720 | 27.649 | .0000 |
| 1019.781 | 653.19 | 649.84 | 6125.49 | 332.87 | .094 | 420.81 | 14195.78 | 9192.21 | 148.19 | .50 | .3719 | 27.647 | .0000 |
| 1034.781 | 652.98 | 649.62 | 6125.49 | 333.06 | .094 | 425.25 | 14423.00 | 9341.46 | 149.75 | .50 | .3720 | 27.645 | .0000 |
| 1049.791 | 652.89 | 649.53 | 6125.48 | 333.21 | .094 | 427.03 | 14511.12 | 9401.70 | 60.44  | .20 | .3720 | 27.643 | .0000 |
| 1065.791 | 652.69 | 649.31 | 6125.46 | 333.89 | .095 | 429.96 | 14719.46 | 9552.92 | 151.73 | .51 | .3721 | 27.641 | .0000 |
| 1070.791 | 652.48 | 649.09 | 6125.44 | 334.76 | .095 | 432.89 | 14920.22 | 9705.24 | 152.84 | .51 | .3723 | 27.637 | .0000 |
| 1084.171 | 652.31 | 648.90 | 6125.42 | 335.70 | .095 | 435.80 | 15092.92 | 9842.07 | 137.29 | .46 | .3726 | 27.633 | .0000 |
| AF1(A)   | 645.99 | 617.60 | 6089.67 | 981.68 | .279 | .....  | 15823.73 | 9876.06 | 34.50  | .35 | .3719 | 27.640 | ..... |
| AF1(B)   | 645.98 | 645.98 | 6126.81 | .01    | .000 | .....  | 10413.12 | -.16    | .00    | .16 | .3716 | 20.670 | ..... |



| SLOT                                   | PO        | P         | T         | U         | AP        | DWDT   | AB      | RB     | DELTA  | MSLOT     |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------|-----------|
| INTERFACE                              | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | IN.    | LB/SEC    |
| FOREWARD                               | 1.1676+02 | 6.5879+02 | 6.1297+03 | 4.0040+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.2986+03 |
| AFT                                    | 1.1677+02 | 6.5879+02 | 6.1297+03 | 4.0040+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.2986+03 |
| GAS BUILDUP IN SLOT, DW/DT = 8.6183-05 |           |           |           |           |           |        |         |        |        |           |
| FOREWARD                               | 4.2705+02 | 6.5778+02 | 6.1285+03 | 1.2347+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 3.9749+03 |
| AFT                                    | 4.2706+02 | 6.5817+02 | 6.1291+03 | 1.2341+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 3.9749+03 |
| GAS BUILDUP IN SLOT, DW/DT = 8.6944-05 |           |           |           |           |           |        |         |        |        |           |
| FOREWARD                               | 7.4631+02 | 6.5608+02 | 6.1260+03 | 2.0932+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.7036+03 |
| AFT                                    | 7.4635+02 | 6.5712+02 | 6.1275+03 | 2.0904+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.7036+03 |
| GAS BUILDUP IN SLOT, DW/DT = 8.9338-05 |           |           |           |           |           |        |         |        |        |           |

IGNITION TIME, TIME (S)

77.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 11337822.     | 2548843.9    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 11444112.     | 2572738.8    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 46100.706     | 10363.851    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT1               | .87161484+09  | .19594681+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 257.03593     | 257.03593    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT1               | .92020278+09  | .20686982+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6243939     | 1.6243939    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4515.3869     | 9954.7108    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 362027.77     | 798134.60    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 24.741915     | 54.546585    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1194.5609     | 2633.5561    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 271.48694     | 420805.60    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 82.389033     | 5027687.3    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 143513.79     | 316393.75    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1270.7254     | 2801.4700    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597821     | 1.1597821    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.858188     | 28.347451    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1560.2209     | 5118.8350    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .95954712-01  | .95954712-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .45648553+09  | 662.07629    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .38960963+11  | 56508.100    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 7.7491959     | 12011.278    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .95178476-02  | .37471841    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .75302473     | 29.646643    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.8826670     | 110005.49    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 53.301165     | 3252636.7    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3405.8782     | 6130.5808    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RAIAL BURN AREA (M**2,IN**2)               | ABCYL                | 263.57000     | 408534.33    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLDT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 80.582808     | 4917464.7    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 209.86279     | 12806613.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .44792994+09  | 649.66747    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .36786834+11  | 53354.793    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .16773725     | 259.99326    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .94964716-02  | .37387684    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .94884853-02  | .37356242    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .73988540     | 29.129347    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670300    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .35591842-02  | 217.19475    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.345870     | 1040202.8    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3474.2604     | 6127.6686    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5728259     | 2437.8850    |
| EXPANSION RATIO                            | EPR                  | 6.8338873     | 6.8338873    |
| PRESSURE RATIO                             | PEPU                 | .22976345-01  | .22976345-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | INCHES   | SQ. IN. | WDOT   | LB/SEC | DWDOT | LB/SEC | DW/DT | RU     | TAU | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|-------|--------|-------|--------|-----|--------|-------|
| PSIA                        | PSIA   | DEG. R | FT/SEC  |        |      |        |          |         |        |        |       |        |       | IN/SEC | IN. | IN/SEC | IN.   |
| FORE                        | 662.08 | 662.07 | 6130.58 | 13.42  | .004 | 366.66 | 10695.45 | 284.15  | 285.42 | 1.27   | .3745 | 29.647 | .0000 | .000   |     | .0000  | .000  |
| 15.000                      | 662.07 | 662.06 | 6130.57 | 19.54  | .006 | 366.93 | 10711.44 | 414.53  | 130.74 | .36    | .3745 | 29.608 | .0000 | .000   |     | .0000  | .000  |
| 30.000                      | 662.06 | 662.04 | 6130.56 | 25.66  | .007 | 367.19 | 10727.41 | 545.00  | 130.83 | .36    | .3745 | 29.604 | .0000 | .000   |     | .0000  | .000  |
| 45.000                      | 662.05 | 662.02 | 6130.55 | 31.75  | .009 | 367.46 | 10743.35 | 675.56  | 130.93 | .36    | .3745 | 29.599 | .0000 | .000   |     | .0000  | .000  |
| 60.000                      | 662.04 | 662.00 | 6130.53 | 37.84  | .011 | 367.72 | 10759.28 | 806.22  | 131.02 | .36    | .3745 | 29.595 | .0000 | .000   |     | .0000  | .000  |
| 75.000                      | 662.03 | 661.97 | 6130.51 | 43.92  | .012 | 367.99 | 10775.18 | 936.97  | 131.11 | .36    | .3745 | 29.590 | .0000 | .000   |     | .0000  | .000  |
| 90.000                      | 662.01 | 661.93 | 6130.49 | 49.98  | .014 | 368.25 | 10791.06 | 1067.81 | 131.21 | .36    | .3745 | 29.585 | .0000 | .000   |     | .0000  | .000  |
| 105.000                     | 661.99 | 661.90 | 6130.46 | 56.03  | .016 | 368.52 | 10806.92 | 1198.75 | 131.30 | .36    | .3745 | 29.580 | .0000 | .000   |     | .0000  | .000  |
| 116.761                     | 661.98 | 661.86 | 6130.44 | 60.76  | .017 | 368.73 | 10819.34 | 1301.47 | 103.01 | .29    | .3745 | 29.575 | .0000 | .000   |     | .0000  | .000  |
| 116.771                     | 661.98 | 661.86 | 6130.44 | 60.60  | .017 | 334.02 | 10848.37 | 1301.47 | .00    | .00    | .3745 | 29.576 | .0000 | .000   |     | .0000  | .000  |
| 131.771                     | 661.96 | 661.82 | 6130.41 | 66.55  | .019 | 352.73 | 10804.82 | 1423.51 | 122.38 | .34    | .3745 | 29.576 | .0000 | .000   |     | .0000  | .000  |
| 143.919                     | 661.94 | 661.78 | 6130.39 | 71.64  | .020 | 367.88 | 10769.53 | 1527.21 | 104.00 | .29    | .3745 | 29.568 | .0000 | .000   |     | .0000  | .000  |
| 158.919                     | 661.91 | 661.73 | 6130.35 | 77.45  | .022 | 368.81 | 10816.34 | 1658.12 | 131.27 | .36    | .3745 | 29.563 | .0000 | .000   |     | .0000  | .000  |
| 173.919                     | 661.88 | 661.67 | 6130.32 | 83.22  | .024 | 369.74 | 10862.98 | 1789.36 | 131.60 | .37    | .3744 | 29.557 | .0000 | .000   |     | .0000  | .000  |
| 188.919                     | 661.85 | 661.61 | 6130.28 | 88.97  | .025 | 370.67 | 10909.43 | 1920.92 | 131.93 | .37    | .3744 | 29.551 | .0000 | .000   |     | .0000  | .000  |
| 203.919                     | 661.82 | 661.54 | 6130.24 | 94.69  | .027 | 371.60 | 10955.72 | 2052.81 | 132.26 | .37    | .3744 | 29.545 | .0000 | .000   |     | .0000  | .000  |
| 218.919                     | 661.78 | 661.47 | 6130.19 | 100.37 | .028 | 372.53 | 11001.82 | 2185.02 | 132.58 | .37    | .3744 | 29.539 | .0000 | .000   |     | .0000  | .000  |
| 233.919                     | 661.74 | 661.39 | 6130.15 | 106.03 | .030 | 373.45 | 11047.75 | 2317.56 | 132.91 | .37    | .3744 | 29.533 | .0000 | .000   |     | .0000  | .000  |
| 248.919                     | 661.70 | 661.31 | 6130.10 | 111.66 | .032 | 374.38 | 11093.51 | 2450.43 | 133.23 | .37    | .3744 | 29.527 | .0000 | .000   |     | .0000  | .000  |
| 263.919                     | 661.65 | 661.23 | 6130.05 | 117.26 | .033 | 375.31 | 11139.08 | 2583.61 | 133.56 | .37    | .3744 | 29.521 | .0000 | .000   |     | .0000  | .000  |
| 278.919                     | 661.61 | 661.14 | 6130.00 | 122.83 | .035 | 376.24 | 11184.98 | 2717.13 | 133.89 | .37    | .3743 | 29.515 | .0000 | .000   |     | .0000  | .000  |
| 293.919                     | 661.56 | 661.05 | 6129.94 | 128.38 | .036 | 377.17 | 11229.70 | 2850.96 | 134.21 | .37    | .3743 | 29.508 | .0000 | .000   |     | .0000  | .000  |
| 308.919                     | 661.51 | 660.95 | 6129.88 | 133.90 | .038 | 378.10 | 11274.75 | 2985.12 | 134.53 | .37    | .3743 | 29.502 | .0000 | .000   |     | .0000  | .000  |
| 323.919                     | 661.45 | 660.85 | 6129.82 | 139.40 | .039 | 379.03 | 11319.62 | 3119.61 | 134.86 | .38    | .3743 | 29.495 | .0000 | .000   |     | .0000  | .000  |
| 338.919                     | 661.40 | 660.75 | 6129.76 | 144.87 | .041 | 379.96 | 11364.31 | 3254.41 | 135.18 | .38    | .3743 | 29.488 | .0000 | .000   |     | .0000  | .000  |
| 353.919                     | 661.34 | 660.64 | 6129.70 | 150.32 | .043 | 380.89 | 11408.83 | 3389.54 | 135.51 | .38    | .3742 | 29.482 | .0000 | .000   |     | .0000  | .000  |
| 368.919                     | 661.28 | 660.53 | 6129.64 | 155.75 | .044 | 381.82 | 11453.17 | 3524.99 | 135.83 | .38    | .3742 | 29.475 | .0000 | .000   |     | .0000  | .000  |
| 383.919                     | 661.21 | 660.42 | 6129.57 | 161.15 | .046 | 382.74 | 11497.33 | 3660.76 | 136.15 | .38    | .3742 | 29.468 | .0000 | .000   |     | .0000  | .000  |
| 398.919                     | 661.15 | 660.30 | 6129.50 | 166.54 | .047 | 383.67 | 11541.32 | 3796.86 | 136.47 | .38    | .3742 | 29.461 | .0000 | .000   |     | .0000  | .000  |
| 403.048                     | 661.13 | 660.26 | 6129.48 | 168.02 | .048 | 383.93 | 11553.40 | 3834.37 | 37.62  | .10    | .3742 | 29.454 | .0000 | .000   |     | .0000  | .000  |
| 418.048                     | 661.07 | 660.14 | 6129.40 | 174.05 | .049 | 384.07 | 11550.33 | 3970.38 | 136.38 | .38    | .3741 | 29.452 | .0000 | .000   |     | .0000  | .000  |
| 427.051                     | 661.03 | 660.06 | 6129.35 | 177.66 | .050 | 384.96 | 11548.72 | 4051.69 | 81.54  | .23    | .3741 | 29.446 | .0000 | .000   |     | .0000  | .000  |
| 427.061                     | 660.98 | 660.42 | 6129.87 | 135.17 | .038 | 208.64 | 15172.48 | 4051.69 | .00    | .00    | .3742 | 29.471 | .0000 | .000   |     | .0000  | .000  |
| 442.061                     | 660.93 | 660.37 | 6129.63 | 156.60 | .044 | 274.21 | 13373.29 | 4137.38 | 85.97  | .28    | .3742 | 29.471 | .0000 | .000   |     | .0000  | .000  |
| 457.061                     | 661.36 | 660.29 | 6129.21 | 187.05 | .053 | 339.78 | 11491.53 | 4246.38 | 109.33 | .32    | .3742 | 29.443 | .0000 | .000   |     | .0000  | .000  |
| 473.204                     | 661.51 | 660.24 | 6128.96 | 203.39 | .058 | 366.63 | 10697.06 | 4297.75 | 51.51  | .14    | .3742 | 29.402 | .0000 | .000   |     | .0000  | .000  |
| 478.204                     | 661.42 | 660.08 | 6128.87 | 208.91 | .059 | 367.21 | 10732.23 | 4428.04 | 130.66 | .36    | .3741 | 29.381 | .0000 | .000   |     | .0000  | .000  |
| 493.204                     | 661.33 | 659.92 | 6128.78 | 214.42 | .061 | 367.79 | 10767.29 | 4558.54 | 130.86 | .36    | .3741 | 29.372 | .0000 | .000   |     | .0000  | .000  |
| 508.204                     | 661.24 | 659.76 | 6128.69 | 219.90 | .062 | 368.37 | 10802.22 | 4689.23 | 131.05 | .36    | .3741 | 29.363 | .0000 | .000   |     | .0000  | .000  |
| 523.204                     | 661.15 | 659.59 | 6128.59 | 225.37 | .064 | 368.95 | 10837.04 | 4820.11 | 131.25 | .36    | .3740 | 29.354 | .0000 | .000   |     | .0000  | .000  |
| 538.204                     | 661.06 | 659.42 | 6128.50 | 230.81 | .065 | 369.52 | 10871.74 | 4951.18 | 131.44 | .37    | .3740 | 29.344 | .0000 | .000   |     | .0000  | .000  |
| 553.204                     | 660.96 | 659.25 | 6128.40 | 236.24 | .067 | 370.10 | 10906.33 | 5082.46 | 131.64 | .37    | .3740 | 29.335 | .0000 | .000   |     | .0000  | .000  |
| 568.204                     | 660.86 | 659.07 | 6128.30 | 241.65 | .068 | 370.68 | 10940.79 | 5213.92 | 131.83 | .37    | .3739 | 29.325 | .0000 | .000   |     | .0000  | .000  |
| 583.204                     | 660.76 | 658.89 | 6128.19 | 247.04 | .070 | 371.26 | 10975.14 | 5345.58 | 132.02 | .37    | .3739 | 29.315 | .0000 | .000   |     | .0000  | .000  |
| 598.204                     | 660.66 | 658.70 | 6128.09 | 252.41 | .071 | 371.84 | 11009.38 | 5477.42 | 132.22 | .37    | .3739 | 29.306 | .0000 | .000   |     | .0000  | .000  |
| 613.204                     | 660.55 | 658.51 | 6127.98 | 257.77 | .073 | 372.42 | 11043.48 | 5609.47 | 132.41 | .37    | .3734 | 29.296 | .0000 | .000   |     | .0000  | .000  |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|
| 628.204  | 660.44 | 658.32 | 6127.87 | 263.11 | .075 | 372.99 | 11077.49 | 5741.70 | 132.60 | .37 | .3738 | 29.286 | .0000 |
| 643.204  | 660.33 | 658.12 | 6127.76 | 268.43 | .076 | 373.57 | 11111.37 | 5874.12 | 132.80 | .37 | .3738 | 29.276 | .0000 |
| 658.204  | 660.22 | 657.92 | 6127.65 | 273.74 | .078 | 374.15 | 11145.13 | 6006.74 | 132.99 | .37 | .3737 | 29.266 | .0000 |
| 673.204  | 660.10 | 657.71 | 6127.53 | 279.03 | .079 | 374.73 | 11178.78 | 6139.55 | 133.18 | .37 | .3737 | 29.256 | .0000 |
| 688.204  | 659.98 | 657.51 | 6127.41 | 284.30 | .081 | 375.31 | 11212.31 | 6272.55 | 133.37 | .37 | .3736 | 29.246 | .0000 |
| 703.204  | 659.86 | 657.29 | 6127.30 | 289.57 | .082 | 375.89 | 11245.72 | 6405.73 | 133.56 | .37 | .3736 | 29.236 | .0000 |
| 718.204  | 659.74 | 657.08 | 6127.18 | 294.81 | .083 | 376.46 | 11279.02 | 6539.11 | 133.75 | .37 | .3736 | 29.226 | .0000 |
| 733.204  | 659.67 | 656.96 | 6127.11 | 297.60 | .084 | 376.77 | 11296.70 | 6610.21 | 134.29 | .37 | .3735 | 29.215 | .0000 |
| 748.191  | 659.50 | 656.74 | 6127.04 | 300.55 | .085 | 377.66 | 11416.30 | 6744.12 | 134.29 | .37 | .3735 | 29.210 | .0000 |
| 746.336  | 659.45 | 656.66 | 6127.02 | 301.56 | .085 | 377.44 | 11457.04 | 6790.21 | 46.22  | .13 | .3734 | 29.205 | .0000 |
| 746.346  | 659.33 | 657.58 | 6128.35 | 238.60 | .060 | 274.60 | 14463.46 | 6790.21 | .00    | .00 | .3736 | 29.252 | .0000 |
| 761.346  | 659.54 | 657.48 | 6127.94 | 259.52 | .073 | 306.41 | 13500.16 | 6893.18 | 103.30 | .32 | .3736 | 29.253 | .0000 |
| 776.346  | 659.81 | 657.34 | 6127.42 | 284.21 | .080 | 338.23 | 12533.38 | 7007.45 | 114.61 | .34 | .3736 | 29.228 | .0000 |
| 791.346  | 660.17 | 657.16 | 6126.73 | 313.63 | .089 | 370.04 | 11563.14 | 7133.00 | 125.91 | .36 | .3736 | 29.199 | .0000 |
| 806.331  | 660.27 | 657.11 | 6126.54 | 321.27 | .091 | 377.43 | 11337.23 | 7163.78 | 30.87  | .09 | .3735 | 29.163 | .0000 |
| 821.331  | 659.46 | 656.87 | 6126.42 | 325.68 | .092 | 378.41 | 11397.01 | 7297.76 | 134.35 | .38 | .3735 | 29.158 | .0000 |
| 836.331  | 659.80 | 656.63 | 6126.31 | 330.06 | .093 | 379.40 | 11456.41 | 7432.07 | 134.69 | .38 | .3735 | 29.149 | .0000 |
| 851.781  | 659.65 | 656.14 | 6126.20 | 334.44 | .095 | 380.39 | 11515.44 | 7566.72 | 135.02 | .38 | .3734 | 29.139 | .0000 |
| 867.781  | 659.31 | 655.89 | 6126.08 | 338.79 | .096 | 381.37 | 11573.90 | 7701.24 | 134.90 | .38 | .3734 | 29.130 | .0000 |
| 884.781  | 659.00 | 655.64 | 6126.19 | 334.71 | .095 | 385.81 | 11926.57 | 7837.16 | 136.30 | .38 | .3733 | 29.120 | .0000 |
| 899.781  | 658.70 | 655.41 | 6126.28 | 331.22 | .094 | 393.24 | 12268.02 | 7974.62 | 137.85 | .39 | .3733 | 29.127 | .0000 |
| 914.781  | 658.42 | 655.18 | 6126.36 | 328.29 | .093 | 394.68 | 12598.25 | 8113.63 | 139.41 | .40 | .3732 | 29.132 | .0000 |
| 929.781  | 658.15 | 654.95 | 6126.42 | 325.84 | .092 | 399.12 | 12917.26 | 8254.19 | 140.76 | .40 | .3731 | 29.135 | .0000 |
| 944.781  | 657.90 | 654.73 | 6126.47 | 323.45 | .092 | 403.55 | 13225.05 | 8396.29 | 142.51 | .41 | .3731 | 29.137 | .0000 |
| 959.781  | 657.66 | 654.51 | 6126.51 | 322.28 | .091 | 407.99 | 13521.61 | 8539.94 | 144.06 | .42 | .3730 | 29.138 | .0000 |
| 974.781  | 657.43 | 654.30 | 6126.54 | 321.09 | .091 | 412.42 | 13806.96 | 8685.12 | 145.60 | .42 | .3729 | 29.139 | .0000 |
| 989.781  | 657.20 | 654.08 | 6126.56 | 320.27 | .091 | 416.86 | 14081.08 | 8831.84 | 147.15 | .43 | .3728 | 29.139 | .0000 |
| 1004.781 | 656.99 | 653.87 | 6126.57 | 319.78 | .091 | 421.30 | 14343.98 | 8980.11 | 148.69 | .43 | .3728 | 29.139 | .0000 |
| 1019.781 | 656.78 | 653.67 | 6126.58 | 319.61 | .091 | 425.73 | 14595.66 | 9129.94 | 150.26 | .43 | .3728 | 29.137 | .0000 |
| 1034.781 | 656.58 | 653.46 | 6126.57 | 319.75 | .091 | 430.17 | 14836.12 | 9281.37 | 151.87 | .44 | .3730 | 29.136 | .0000 |
| 1049.781 | 656.50 | 653.38 | 6126.56 | 320.18 | .091 | 434.61 | 15065.35 | 9434.48 | 153.54 | .44 | .3733 | 29.135 | .0000 |
| 1064.781 | 656.31 | 653.17 | 6126.54 | 320.43 | .091 | 436.38 | 15154.05 | 9496.30 | 62.00  | .18 | .3734 | 29.133 | .0000 |
| 1079.781 | 656.12 | 652.96 | 6126.51 | 321.24 | .091 | 439.32 | 15367.82 | 9651.56 | 155.73 | .44 | .3738 | 29.131 | .0000 |
| 1094.781 | 655.96 | 652.78 | 6126.48 | 322.24 | .091 | 442.26 | 15573.42 | 9808.05 | 156.93 | .45 | .3743 | 29.128 | .0000 |
| AF1(A)   | 649.67 | 620.97 | 6090.38 | 323.29 | .092 | 444.88 | 15749.62 | 9948.71 | 141.67 | .40 | .3749 | 29.125 | .0000 |
| AF1(B)   | 649.65 | 649.65 | 6127.67 | 984.16 | .280 | .....  | 15823.73 | 9954.71 | 6.17   | .12 | .3739 | 29.129 | ..... |
|          |        |        |         | .00    | .000 | .....  | 10413.12 | -0.05   | .00    | .05 | .3736 | 20.670 | ..... |

| SLOT                                   | PO        | P         | T         | U         | AP        | DWDOT     | AB      | RB     | DELTA  | WSLOT     |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|--------|--------|-----------|
| INTERFACE                              | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC    | SQ. IN. | IN/SEC | TAU    | LB/SEC    |
| LOCATION                               |           |           |           |           |           |           |         |        | IN.    |           |
| IN.                                    |           |           |           |           |           |           |         |        |        |           |
| FOREWARD                               | 1.1676+02 | 6.6198+02 | 6.6186+02 | 6.1304+03 | 3.9937+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000 | 1.3015+03 |
| AFT                                    | 1.1677+02 | 6.6198+02 | 6.6186+02 | 6.1304+03 | 3.9937+01 | 1.6460+04 | 0.0000  | 0.0000 | 0.0000 | 1.3015+03 |
| GAS BUILDUP IN SLOT, DW/DT = 2.5641-05 |           |           |           |           |           |           |         |        |        |           |

|                                        |           |           |           |           |           |           |        |        |        |           |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FOREWARD                               | 4.2705+02 | 6.6103+02 | 6.6006+02 | 6.1293+03 | 1.2524+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.0517+03 |
| AFT                                    | 4.2706+02 | 6.6139+02 | 6.6042+02 | 6.1299+03 | 1.2518+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.0517+03 |
| GAS BUILDUP IN SLOT, DW/DT = 2.6510-05 |           |           |           |           |           |           |        |        |        |           |

|                                        |           |           |           |           |           |           |        |        |        |           |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FOREWARD                               | 7.4634+02 | 6.5945+02 | 6.5666+02 | 6.1270+03 | 2.1089+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.7902+03 |
| AFT                                    | 7.4635+02 | 6.6037+02 | 6.5758+02 | 6.1284+03 | 2.1064+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.7902+03 |
| GAS BUILDUP IN SLOT, DW/DT = 2.8737-05 |           |           |           |           |           |           |        |        |        |           |

|                                                                                                                                  |           |            |   |     |         |        |         |      |       |
|----------------------------------------------------------------------------------------------------------------------------------|-----------|------------|---|-----|---------|--------|---------|------|-------|
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 1 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 2 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 3 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 4 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 5 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 6 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 7 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1084.1710 | SECTOR NO. | 8 | TAU | 29.4590 | TAUWDP | 29.4590 | TIME | 77.00 |
| *PARTBN* TIME= 79.00 IS=1 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1072.05 AINCHI=1070.79 DELZ= 1.255 ALP=447.28 ALPHI=447.09 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=2 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1071.14 AINCHI=1070.79 DELZ= .344 ALP=447.30 ALPHI=447.30  |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=3 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1071.32 AINCHI=1070.79 DELZ= .531 ALP=447.30 ALPHI=447.26  |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=4 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1072.27 AINCHI=1070.79 DELZ= 1.478 ALP=447.27 ALPHI=447.04 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=5 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.42 AINCHI=1070.79 DELZ= 2.633 ALP=447.24 ALPHI=446.78 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=6 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.72 AINCHI=1070.79 DELZ= 2.930 ALP=447.23 ALPHI=446.72 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=7 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.67 AINCHI=1070.79 DELZ= 2.875 ALP=447.23 ALPHI=446.73 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=8 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.30 AINCHI=1070.79 DELZ= 2.512 ALP=447.24 ALPHI=446.81 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=1 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1072.05 AINCHI=1070.79 DELZ= 1.255 ALP=447.28 ALPHI=447.09 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=2 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1071.14 AINCHI=1070.79 DELZ= .344 ALP=447.30 ALPHI=447.30  |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=3 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1071.32 AINCHI=1070.79 DELZ= .531 ALP=447.30 ALPHI=447.26  |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=4 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1072.27 AINCHI=1070.79 DELZ= 1.478 ALP=447.27 ALPHI=447.04 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=5 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.42 AINCHI=1070.79 DELZ= 2.633 ALP=447.24 ALPHI=446.78 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=6 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.72 AINCHI=1070.79 DELZ= 2.930 ALP=447.23 ALPHI=446.72 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=7 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.67 AINCHI=1070.79 DELZ= 2.875 ALP=447.23 ALPHI=446.73 |           |            |   |     |         |        |         |      |       |
| *PARTBN* TIME= 79.00 IS=8 ZCALC( 81)=1084.17 ZCALC( 80)=1070.79 AINCW=1073.30 AINCHI=1070.79 DELZ= 2.512 ALP=447.24 ALPHI=446.81 |           |            |   |     |         |        |         |      |       |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 1 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 2 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 3 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 4 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 5 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 6 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 1055.7910 | SECTOR NO. | 7 | TAU | 30.4829 | TAUWDP | 30.4829 | TIME | 79.00 |

| WEB BURNOUT INCREMENT LOCATION                                                                                                  | SECTOR NO. | TAU     | TAUWDP  | TIME  |
|---------------------------------------------------------------------------------------------------------------------------------|------------|---------|---------|-------|
| 1055.7910                                                                                                                       | 8          | 30.4029 | 30.4029 | 79.00 |
| 1070.7910                                                                                                                       | 1          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 2          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 3          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 4          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 5          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 6          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 7          | 29.9417 | 29.9417 | 79.00 |
| 1070.7910                                                                                                                       | 8          | 29.9417 | 29.9417 | 79.00 |
| PARTBN TIME = 81.00 IS=1 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1051.32 AINCHI=1040.79 DELZ=10.525 ALP=447.89 ALPHI=445.88 |            |         |         |       |
| PARTBN TIME = 81.00 IS=2 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1050.40 AINCHI=1040.79 DELZ= 9.609 ALP=447.92 ALPHI=446.08 |            |         |         |       |
| PARTBN TIME = 81.00 IS=3 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1050.59 AINCHI=1040.79 DELZ= 9.795 ALP=447.91 ALPHI=446.04 |            |         |         |       |
| PARTBN TIME = 81.00 IS=4 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1051.54 AINCHI=1040.79 DELZ=10.749 ALP=447.88 ALPHI=445.83 |            |         |         |       |
| PARTBN TIME = 81.00 IS=5 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1052.70 AINCHI=1040.79 DELZ=11.914 ALP=447.85 ALPHI=445.57 |            |         |         |       |
| PARTBN TIME = 81.00 IS=6 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1053.01 AINCHI=1040.79 DELZ=12.217 ALP=447.84 ALPHI=445.50 |            |         |         |       |
| PARTBN TIME = 81.00 IS=7 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1052.95 AINCHI=1040.79 DELZ=11.792 ALP=447.85 ALPHI=445.60 |            |         |         |       |
| PARTBN TIME = 81.00 IS=8 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1052.58 AINCHI=1040.79 DELZ=10.525 ALP=447.89 ALPHI=445.88 |            |         |         |       |
| PARTBN TIME = 81.00 IS=1 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1051.32 AINCHI=1040.79 DELZ= 9.609 ALP=447.92 ALPHI=446.08 |            |         |         |       |
| PARTBN TIME = 81.00 IS=2 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1050.40 AINCHI=1040.79 DELZ= 9.795 ALP=447.91 ALPHI=446.04 |            |         |         |       |
| PARTBN TIME = 81.00 IS=3 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1051.54 AINCHI=1040.79 DELZ=10.749 ALP=447.88 ALPHI=445.83 |            |         |         |       |
| PARTBN TIME = 81.00 IS=4 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1052.70 AINCHI=1040.79 DELZ=11.914 ALP=447.85 ALPHI=445.57 |            |         |         |       |
| PARTBN TIME = 81.00 IS=5 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1053.01 AINCHI=1040.79 DELZ=12.217 ALP=447.84 ALPHI=445.50 |            |         |         |       |
| PARTBN TIME = 81.00 IS=6 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1052.95 AINCHI=1040.79 DELZ=11.792 ALP=447.85 ALPHI=445.60 |            |         |         |       |
| PARTBN TIME = 81.00 IS=7 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1052.58 AINCHI=1040.79 DELZ=10.525 ALP=447.89 ALPHI=445.88 |            |         |         |       |
| PARTBN TIME = 81.00 IS=8 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1051.32 AINCHI=1040.79 DELZ= 9.609 ALP=447.92 ALPHI=446.08 |            |         |         |       |

IGNITION TIME, TIME (S)

81.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10784664.     | 2469450.8    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 11066647.     | 2487881.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 49342.179     | 11092.563    |
| DELIVERED TOTAL IMPULSE (N*5,LBF*5)        | SRMDTI               | .91638669*09  | .20601192*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.74233     | 256.74233    |
| VACUUM TOTAL IMPULSE (N*5,LBF*5)           | SRMVTI               | .96534777*09  | .21701926*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6247707     | 1.6247707    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4368.9132     | 9631.8349    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SHDOTN               | 379845.31     | 837415.57    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 26.481590     | 58.381912    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1090.0671     | 2403.1866    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 265.03291     | 410801.84    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 72.190812     | 4405353.6    |
| PROPELLANT MASS REMAINING (KG,LBM)         | MF                   | 125680.25     | 277077.52    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1265.9576     | 2790.9589    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597582     | 1.1597582    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | ANW                  | 12.853747     | 28.337660    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.9054     | 5117.8000    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94706527-01  | .94706527-01 |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .44002091*09  | 638.19638    |
| PRESSURE INTEGRAL (N*5/M**2,LBF*5/IN**2)   | SPHDT                | .40750932*11  | 59115.834    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 7.0667689     | 10953.514    |
| BURN RATE (M/S,IN/S)                       | RUZ(1)               | .93962171-02  | .36492981    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .79101179     | 31.142197    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.5218039     | 92866.170    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 53.582928     | 3269776.0    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3402.7613     | 6124.9703    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| NOZIAL BURN AREA (M**2,IN**2)              | ABCYL                | 257.96614     | 399848.33    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLDT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 70.667043     | 4312367.6    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 218.75786     | 13349424.    |
| NOZ END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .43207152*09  | 626.66676    |
| PRESSURE INTEGRAL (N*5/M**2,LBF*5/IN**2)   | SPONDT               | .38551720*11  | 55914.544    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RDZ(NT*1,1)          | .93863464-02  | .36454120    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NT*2,1)          | .93782976-02  | .36922432    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NT*1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NT*2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NT*2,3)         | 3401.2576     | 6122.2637    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5764069     | 2443.4356    |
| EXPANSION RATIO                            | EPR                  | 6.8183634     | 6.8183634    |
| PRESSURE RATIO                             | PEPO                 | .23046429-01  | .23046429-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.00000000    | 2.00000000   |



## INCREMENT DIVIDING PLANE DATA:

| HASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP         | WDOT     | DWDOT  | DN/DT  | RB     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|------------|----------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.    | LB/SEC   | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FURE                        | 638.20 | 638.19 | 6124.97 | 12.23  | .003 | 376.08 | 11250.55   | 262.62   | 256.96 | -5.67  | .3697  | 31.142 | .0000  | .000  |
| 15.000                      | 638.19 | 638.18 | 6124.96 | 18.36  | .005 | 376.34 | 11266.93   | 395.00   | 132.38 | .01    | .3697  | 31.103 | .0000  | .000  |
| 30.000                      | 638.18 | 638.17 | 6124.95 | 24.48  | .007 | 376.60 | 11203.29   | 527.47   | 132.47 | .01    | .3697  | 31.099 | .0000  | .000  |
| 45.000                      | 638.17 | 638.15 | 6124.94 | 30.58  | .009 | 376.87 | 11299.63   | 660.03   | 132.57 | .01    | .3697  | 31.094 | .0000  | .000  |
| 60.000                      | 638.16 | 638.13 | 6124.92 | 36.68  | .010 | 377.13 | 11315.94   | 792.68   | 132.66 | .00    | .3697  | 31.089 | .0000  | .000  |
| 75.000                      | 638.15 | 638.10 | 6124.90 | 42.76  | .012 | 377.39 | 11332.23   | 925.42   | 132.75 | .00    | .3697  | 31.084 | .0000  | .000  |
| 90.000                      | 638.14 | 638.07 | 6124.88 | 48.83  | .014 | 377.65 | 11348.49   | 1058.26  | 132.84 | .00    | .3697  | 31.080 | .0000  | .000  |
| 105.000                     | 638.12 | 638.03 | 6124.86 | 54.89  | .016 | 377.91 | 11364.73   | 1191.18  | 132.93 | .00    | .3697  | 31.074 | .0000  | .000  |
| 116.761                     | 638.11 | 638.00 | 6124.84 | 59.63  | .017 | 378.12 | 11377.45   | 1295.46  | 104.29 | .00    | .3697  | 31.069 | .0000  | .000  |
| 131.771                     | 638.11 | 638.00 | 6124.84 | 59.77  | .017 | 377.99 | 11350.89   | 1295.46  | .00    | .00    | .3697  | 31.070 | .0000  | .000  |
| 143.719                     | 638.09 | 637.96 | 6124.81 | 65.51  | .019 | 359.71 | 11337.33   | 1418.22  | 122.74 | .02    | .3697  | 31.070 | .0000  | .000  |
| 158.919                     | 638.04 | 637.87 | 6124.75 | 76.26  | .022 | 378.22 | 11374.66   | 1656.13  | 105.00 | .00    | .3697  | 31.063 | .0000  | .000  |
| 173.919                     | 638.01 | 637.81 | 6124.71 | 82.06  | .023 | 379.15 | 11422.75   | 1789.36  | 132.91 | .00    | .3697  | 31.057 | .0000  | .000  |
| 188.919                     | 637.98 | 637.76 | 6124.67 | 87.82  | .025 | 380.08 | 11470.66   | 1922.91  | 133.55 | .00    | .3696  | 31.046 | .0000  | .000  |
| 203.919                     | 637.95 | 637.69 | 6124.63 | 93.56  | .026 | 381.00 | 11518.38   | 2056.78  | 133.87 | .00    | .3696  | 31.040 | .0000  | .000  |
| 218.919                     | 637.92 | 637.62 | 6124.59 | 99.26  | .028 | 381.93 | 11565.90   | 2190.77  | 134.20 | .00    | .3696  | 31.034 | .0000  | .000  |
| 233.919                     | 637.88 | 637.55 | 6124.54 | 104.94 | .030 | 382.86 | 11613.23   | 2325.49  | 134.52 | .00    | .3696  | 31.028 | .0000  | .000  |
| 248.919                     | 637.84 | 637.48 | 6124.50 | 110.58 | .031 | 383.79 | 11660.38   | 2460.32  | 134.84 | .00    | .3696  | 31.021 | .0000  | .000  |
| 263.919                     | 637.80 | 637.40 | 6124.45 | 116.20 | .033 | 384.71 | 11707.33   | 2595.48  | 135.16 | .00    | .3696  | 31.015 | .0000  | .000  |
| 278.919                     | 637.75 | 637.31 | 6124.39 | 121.80 | .034 | 385.64 | 11754.09   | 2730.96  | 135.48 | .00    | .3695  | 31.009 | .0000  | .000  |
| 293.919                     | 637.71 | 637.23 | 6124.34 | 127.37 | .036 | 386.57 | 11800.66   | 2866.75  | 135.82 | .00    | .3695  | 31.002 | .0000  | .000  |
| 308.919                     | 637.66 | 637.13 | 6124.28 | 132.91 | .038 | 387.49 | 11847.34   | 3002.87  | 136.12 | .00    | .3695  | 30.996 | .0000  | .000  |
| 323.919                     | 637.61 | 637.04 | 6124.22 | 138.43 | .039 | 388.42 | 11893.22   | 3139.30  | 136.43 | .00    | .3695  | 30.989 | .0000  | .000  |
| 338.919                     | 637.55 | 636.94 | 6124.16 | 143.92 | .041 | 389.35 | 11939.22   | 3276.06  | 136.75 | .00    | .3695  | 30.982 | .0000  | .000  |
| 353.919                     | 637.50 | 636.84 | 6124.10 | 149.39 | .042 | 390.27 | 11985.03   | 3413.13  | 137.07 | .00    | .3695  | 30.975 | .0000  | .000  |
| 368.919                     | 637.44 | 636.73 | 6124.04 | 154.84 | .044 | 391.20 | 12030.64   | 3550.53  | 137.39 | .00    | .3694  | 30.968 | .0000  | .000  |
| 383.919                     | 637.38 | 636.62 | 6123.97 | 160.27 | .045 | 392.13 | 12076.07   | 3688.24  | 137.71 | .00    | .3694  | 30.961 | .0000  | .000  |
| 398.919                     | 637.32 | 636.51 | 6123.90 | 165.68 | .047 | 393.06 | 12121.35   | 3826.27  | 138.02 | .00    | .3694  | 30.954 | .0000  | .000  |
| 413.919                     | 637.26 | 636.47 | 6123.88 | 171.16 | .047 | 393.93 | 12166.28   | 3964.32  | 138.35 | .00    | .3694  | 30.947 | .0000  | .000  |
| 428.919                     | 637.20 | 636.35 | 6123.83 | 176.88 | .049 | 394.85 | 12211.45   | 4102.26  | 138.67 | .01    | .3694  | 30.945 | .0000  | .000  |
| 443.919                     | 637.14 | 636.24 | 6123.75 | 182.60 | .050 | 395.77 | 12256.54   | 4240.73  | 139.00 | .01    | .3693  | 30.939 | .0000  | .000  |
| 458.919                     | 637.08 | 636.14 | 6123.67 | 188.32 | .052 | 396.69 | 12301.62   | 4379.20  | 139.32 | .02    | .3693  | 30.932 | .0000  | .000  |
| 473.919                     | 637.02 | 636.04 | 6123.59 | 194.04 | .054 | 397.61 | 12346.70   | 4517.67  | 139.64 | .03    | .3693  | 30.925 | .0000  | .000  |
| 488.919                     | 636.96 | 635.94 | 6123.51 | 199.76 | .056 | 398.53 | 12391.78   | 4656.14  | 140.00 | .04    | .3693  | 30.918 | .0000  | .000  |
| 503.919                     | 636.90 | 635.83 | 6123.43 | 205.48 | .058 | 399.45 | 12436.86   | 4794.61  | 140.32 | .05    | .3693  | 30.911 | .0000  | .000  |
| 518.919                     | 636.84 | 635.77 | 6123.35 | 211.20 | .060 | 400.37 | 12481.94   | 4933.08  | 140.64 | .06    | .3693  | 30.904 | .0000  | .000  |
| 533.919                     | 636.78 | 635.69 | 6123.27 | 216.92 | .062 | 401.29 | 12527.02   | 5071.55  | 140.96 | .07    | .3693  | 30.897 | .0000  | .000  |
| 548.919                     | 636.72 | 635.61 | 6123.19 | 222.64 | .064 | 402.21 | 12572.10   | 5210.02  | 141.28 | .08    | .3693  | 30.890 | .0000  | .000  |
| 563.919                     | 636.66 | 635.53 | 6123.11 | 228.36 | .066 | 403.13 | 12617.18   | 5348.49  | 141.60 | .09    | .3693  | 30.883 | .0000  | .000  |
| 578.919                     | 636.60 | 635.45 | 6123.03 | 234.08 | .068 | 404.05 | 12662.26   | 5486.96  | 141.92 | .10    | .3693  | 30.876 | .0000  | .000  |
| 593.919                     | 636.54 | 635.37 | 6122.95 | 239.80 | .070 | 404.97 | 12707.34   | 5625.43  | 142.24 | .11    | .3693  | 30.869 | .0000  | .000  |
| 608.919                     | 636.48 | 635.29 | 6122.87 | 245.52 | .072 | 405.89 | 12752.42   | 5763.90  | 142.56 | .12    | .3693  | 30.862 | .0000  | .000  |
| 623.919                     | 636.42 | 635.21 | 6122.79 | 251.24 | .074 | 406.81 | 12797.50   | 5902.37  | 142.88 | .13    | .3693  | 30.855 | .0000  | .000  |
| 638.919                     | 636.36 | 635.13 | 6122.71 | 256.96 | .076 | 407.73 | 12842.58   | 6040.84  | 143.20 | .14    | .3693  | 30.848 | .0000  | .000  |
| 653.919                     | 636.30 | 635.05 | 6122.63 | 262.68 | .078 | 408.65 | 12887.66   | 6179.31  | 143.52 | .15    | .3693  | 30.841 | .0000  | .000  |
| 668.919                     | 636.24 | 634.97 | 6122.55 | 268.40 | .080 | 409.57 | 12932.74   | 6317.78  | 143.84 | .16    | .3693  | 30.834 | .0000  | .000  |
| 683.919                     | 636.18 | 634.89 | 6122.47 | 274.12 | .082 | 410.49 | 12977.82   | 6456.25  | 144.16 | .17    | .3693  | 30.827 | .0000  | .000  |
| 698.919                     | 636.12 | 634.81 | 6122.39 | 279.84 | .084 | 411.41 | 13022.90   | 6594.72  | 144.48 | .18    | .3693  | 30.820 | .0000  | .000  |
| 713.919                     | 636.06 | 634.73 | 6122.31 | 285.56 | .086 | 412.33 | 13067.98   | 6733.19  | 144.80 | .19    | .3693  | 30.813 | .0000  | .000  |
| 728.919                     | 636.00 | 634.65 | 6122.23 | 291.28 | .088 | 413.25 | 13113.06   | 6871.66  | 145.12 | .20    | .3693  | 30.806 | .0000  | .000  |
| 743.919                     | 635.94 | 634.57 | 6122.15 | 297.00 | .090 | 414.17 | 13158.14   | 7010.13  | 145.44 | .21    | .3693  | 30.799 | .0000  | .000  |
| 758.919                     | 635.88 | 634.49 | 6122.07 | 302.72 | .092 | 415.09 | 13203.22   | 7148.60  | 145.76 | .22    | .3693  | 30.792 | .0000  | .000  |
| 773.919                     | 635.82 | 634.41 | 6121.99 | 308.44 | .094 | 416.01 | 13248.30   | 7287.07  | 146.08 | .23    | .3693  | 30.785 | .0000  | .000  |
| 788.919                     | 635.76 | 634.33 | 6121.91 | 314.16 | .096 | 416.93 | 13293.38   | 7425.54  | 146.40 | .24    | .3693  | 30.778 | .0000  | .000  |
| 803.919                     | 635.70 | 634.25 | 6121.83 | 319.88 | .098 | 417.85 | 13338.46   | 7564.01  | 146.72 | .25    | .3693  | 30.771 | .0000  | .000  |
| 818.919                     | 635.64 | 634.17 | 6121.75 | 325.60 | .100 | 418.77 | 13383.54   | 7702.48  | 147.04 | .26    | .3693  | 30.764 | .0000  | .000  |
| 833.919                     | 635.58 | 634.09 | 6121.67 | 331.32 | .102 | 419.69 | 13428.62   | 7840.95  | 147.36 | .27    | .3693  | 30.757 | .0000  | .000  |
| 848.919                     | 635.52 | 634.01 | 6121.59 | 337.04 | .104 | 420.61 | 13473.70   | 7979.42  | 147.68 | .28    | .3693  | 30.750 | .0000  | .000  |
| 863.919                     | 635.46 | 633.93 | 6121.51 | 342.76 | .106 | 421.53 | 13518.78   | 8117.89  | 148.00 | .29    | .3693  | 30.743 | .0000  | .000  |
| 878.919                     | 635.40 | 633.85 | 6121.43 | 348.48 | .108 | 422.45 | 13563.86   | 8256.36  | 148.32 | .30    | .3693  | 30.736 | .0000  | .000  |
| 893.919                     | 635.34 | 633.77 | 6121.35 | 354.20 | .110 | 423.37 | 13608.94   | 8394.83  | 148.64 | .31    | .3693  | 30.729 | .0000  | .000  |
| 908.919                     | 635.28 | 633.69 | 6121.27 | 359.92 | .112 | 424.29 | 13654.02   | 8533.30  | 148.96 | .32    | .3693  | 30.722 | .0000  | .000  |
| 923.919                     | 635.22 | 633.61 | 6121.19 | 365.64 | .114 | 425.21 | 13699.10   | 8671.77  | 149.28 | .33    | .3693  | 30.715 | .0000  | .000  |
| 938.919                     | 635.16 | 633.53 | 6121.11 | 371.36 | .116 | 426.13 | 13744.18   | 8810.24  | 149.60 | .34    | .3693  | 30.708 | .0000  | .000  |
| 953.919                     | 635.10 | 633.45 | 6121.03 | 377.08 | .118 | 427.05 | 13789.26   | 8948.71  | 149.92 | .35    | .3693  | 30.701 | .0000  | .000  |
| 968.919                     | 635.04 | 633.37 | 6120.95 | 382.80 | .120 | 427.97 | 13834.34   | 9087.18  | 150.24 | .36    | .3693  | 30.694 | .0000  | .000  |
| 983.919                     | 634.98 | 633.29 | 6120.87 | 388.52 | .122 | 428.89 | 13879.42   | 9225.65  | 150.56 | .37    | .3693  | 30.687 | .0000  | .000  |
| 998.919                     | 634.92 | 633.21 | 6120.79 | 394.24 | .124 | 429.81 | 13924.50   | 9364.12  | 150.88 | .38    | .3693  | 30.680 | .0000  | .000  |
| 1013.919                    | 634.86 | 633.13 | 6120.71 | 399.96 | .126 | 430.73 | 13969.58   | 9502.59  | 151.20 | .39    | .3693  | 30.673 | .0000  | .000  |
| 1028.919                    | 634.80 | 633.05 | 6120.63 | 405.68 | .128 | 431.65 | 14014.66   | 9641.06  | 151.52 | .40    | .3693  | 30.666 | .0000  | .000  |
| 1043.919                    | 634.74 | 632.97 | 6120.55 | 411.40 | .130 | 432.57 | 14059.74   | 9779.53  | 151.84 | .41    | .3693  | 30.659 | .0000  | .000  |
| 1058.919                    | 634.68 | 632.89 | 6120.47 | 417.12 | .132 | 433.49 | 14104.82   | 9918.00  | 152.16 | .42    | .3693  | 30.652 | .0000  | .000  |
| 1073.919                    | 634.62 | 632.81 | 6120.39 | 422.84 | .134 | 434.41 | 14149.90   | 10056.47 | 152.48 | .43    | .3693  | 30.645 | .0000  | .000  |
| 1088.919                    | 634.56 | 632.73 | 6120.31 | 428.56 | .136 | 435.33 | 14194.98   | 10194.94 | 152.80 | .44    | .3693  | 30.638 | .0000  | .000  |
| 1103.919                    | 634.50 | 632.65 | 6120.23 | 434.28 | .138 | 436.25 | 14240.06</ |          |        |        |        |        |        |       |



|          |        |        |         |        |      |        |          |          |        |      |      |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|------|------|--------|-------|------|
| 628.204  | 636.62 | 634.62 | 6122.32 | 260.17 | .074 | 382.38 | 11641.29 | 5755.08  | 134.20 | -.00 | 3690 | 30.778 | .0000 | .000 |
| 643.204  | 636.52 | 634.43 | 6122.21 | 265.53 | .075 | 382.95 | 11675.95 | 5889.47  | 134.39 | -.00 | 3690 | 30.768 | .0000 | .000 |
| 658.204  | 636.41 | 634.24 | 6122.10 | 270.87 | .077 | 383.53 | 11710.47 | 6024.35  | 134.58 | -.00 | 3689 | 30.757 | .0000 | .000 |
| 673.204  | 636.30 | 634.05 | 6121.99 | 276.20 | .078 | 384.10 | 11744.87 | 6158.02  | 134.77 | -.00 | 3689 | 30.747 | .0000 | .000 |
| 688.204  | 636.19 | 633.85 | 6121.87 | 281.52 | .080 | 384.68 | 11779.14 | 6293.78  | 134.95 | -.00 | 3689 | 30.737 | .0000 | .000 |
| 703.204  | 636.07 | 633.64 | 6121.75 | 286.82 | .081 | 385.26 | 11813.62 | 6428.92  | 135.14 | -.00 | 3688 | 30.727 | .0000 | .000 |
| 718.204  | 635.96 | 633.44 | 6121.63 | 292.10 | .083 | 385.83 | 11847.29 | 6564.25  | 135.33 | -.00 | 3688 | 30.716 | .0000 | .000 |
| 733.204  | 635.85 | 633.33 | 6121.56 | 294.91 | .084 | 386.41 | 11880.96 | 6699.58  | 135.52 | -.00 | 3687 | 30.706 | .0000 | .000 |
| 748.204  | 635.74 | 633.22 | 6121.49 | 297.97 | .084 | 386.99 | 11914.63 | 6834.91  | 135.71 | -.01 | 3687 | 30.695 | .0000 | .000 |
| 763.204  | 635.63 | 633.11 | 6121.42 | 299.02 | .085 | 387.57 | 11948.30 | 6970.24  | 135.90 | -.01 | 3687 | 30.684 | .0000 | .000 |
| 778.204  | 635.52 | 633.00 | 6121.35 | 300.07 | .085 | 388.15 | 11981.97 | 7105.57  | 136.09 | -.01 | 3686 | 30.673 | .0000 | .000 |
| 793.204  | 635.41 | 632.89 | 6121.28 | 301.12 | .086 | 388.73 | 12015.64 | 7240.90  | 136.28 | -.01 | 3686 | 30.662 | .0000 | .000 |
| 808.204  | 635.30 | 632.78 | 6121.21 | 302.17 | .086 | 389.31 | 12049.71 | 7376.23  | 136.47 | -.01 | 3686 | 30.651 | .0000 | .000 |
| 823.204  | 635.19 | 632.67 | 6121.14 | 303.22 | .087 | 389.89 | 12083.78 | 7511.56  | 136.66 | -.01 | 3685 | 30.640 | .0000 | .000 |
| 838.204  | 635.08 | 632.56 | 6121.07 | 304.27 | .087 | 390.47 | 12117.85 | 7646.89  | 136.85 | -.01 | 3685 | 30.629 | .0000 | .000 |
| 853.204  | 634.97 | 632.45 | 6121.00 | 305.32 | .088 | 391.05 | 12151.92 | 7782.22  | 137.04 | -.01 | 3685 | 30.618 | .0000 | .000 |
| 868.204  | 634.86 | 632.34 | 6120.93 | 306.37 | .088 | 391.63 | 12185.99 | 7917.55  | 137.23 | -.01 | 3685 | 30.607 | .0000 | .000 |
| 883.204  | 634.75 | 632.23 | 6120.86 | 307.42 | .089 | 392.21 | 12220.06 | 8052.88  | 137.42 | -.01 | 3684 | 30.596 | .0000 | .000 |
| 898.204  | 634.64 | 632.12 | 6120.79 | 308.47 | .089 | 392.79 | 12254.13 | 8188.21  | 137.61 | -.01 | 3684 | 30.585 | .0000 | .000 |
| 913.204  | 634.53 | 632.01 | 6120.72 | 309.52 | .090 | 393.37 | 12288.20 | 8323.54  | 137.80 | -.01 | 3684 | 30.574 | .0000 | .000 |
| 928.204  | 634.42 | 631.90 | 6120.65 | 310.57 | .090 | 393.95 | 12322.27 | 8458.87  | 137.99 | -.01 | 3683 | 30.563 | .0000 | .000 |
| 943.204  | 634.31 | 631.79 | 6120.58 | 311.62 | .091 | 394.53 | 12356.34 | 8594.20  | 138.18 | -.01 | 3683 | 30.552 | .0000 | .000 |
| 958.204  | 634.20 | 631.68 | 6120.51 | 312.67 | .091 | 395.11 | 12390.41 | 8729.53  | 138.37 | -.01 | 3683 | 30.541 | .0000 | .000 |
| 973.204  | 634.09 | 631.57 | 6120.44 | 313.72 | .092 | 395.69 | 12424.48 | 8864.86  | 138.56 | -.01 | 3683 | 30.530 | .0000 | .000 |
| 988.204  | 633.98 | 631.46 | 6120.37 | 314.77 | .092 | 396.27 | 12458.55 | 8999.99  | 138.75 | -.01 | 3683 | 30.519 | .0000 | .000 |
| 1003.204 | 633.87 | 631.35 | 6120.30 | 315.82 | .093 | 396.85 | 12492.62 | 9135.32  | 138.94 | -.01 | 3683 | 30.508 | .0000 | .000 |
| 1018.204 | 633.76 | 631.24 | 6120.23 | 316.87 | .093 | 397.43 | 12526.69 | 9270.65  | 139.13 | -.01 | 3683 | 30.497 | .0000 | .000 |
| 1033.204 | 633.65 | 631.13 | 6120.16 | 317.92 | .094 | 398.01 | 12560.76 | 9405.98  | 139.32 | -.01 | 3683 | 30.486 | .0000 | .000 |
| 1048.204 | 633.54 | 631.02 | 6120.09 | 318.97 | .094 | 398.59 | 12594.83 | 9541.31  | 139.51 | -.01 | 3683 | 30.475 | .0000 | .000 |
| 1063.204 | 633.43 | 630.91 | 6120.02 | 319.02 | .095 | 399.17 | 12628.90 | 9676.64  | 139.70 | -.01 | 3683 | 30.464 | .0000 | .000 |
| 1078.204 | 633.32 | 630.80 | 6120.00 | 320.07 | .095 | 399.75 | 12662.97 | 9811.97  | 139.89 | -.01 | 3683 | 30.453 | .0000 | .000 |
| 1093.204 | 633.21 | 630.69 | 6120.00 | 321.12 | .096 | 400.33 | 12697.04 | 9947.30  | 140.08 | -.01 | 3683 | 30.442 | .0000 | .000 |
| 1108.204 | 633.10 | 630.58 | 6120.00 | 322.17 | .096 | 400.91 | 12731.11 | 10082.63 | 140.27 | -.01 | 3683 | 30.431 | .0000 | .000 |
| 1123.204 | 632.99 | 630.47 | 6120.00 | 323.22 | .097 | 401.49 | 12765.18 | 10217.96 | 140.46 | -.01 | 3683 | 30.420 | .0000 | .000 |
| 1138.204 | 632.88 | 630.36 | 6120.00 | 324.27 | .097 | 402.07 | 12799.25 | 10353.29 | 140.65 | -.01 | 3683 | 30.409 | .0000 | .000 |
| 1153.204 | 632.77 | 630.25 | 6120.00 | 325.32 | .098 | 402.65 | 12833.32 | 10488.62 | 140.84 | -.01 | 3683 | 30.398 | .0000 | .000 |
| 1168.204 | 632.66 | 630.14 | 6120.00 | 326.37 | .098 | 403.23 | 12867.39 | 10623.95 | 141.03 | -.01 | 3683 | 30.387 | .0000 | .000 |
| 1183.204 | 632.55 | 630.03 | 6120.00 | 327.42 | .099 | 403.81 | 12901.46 | 10759.28 | 141.22 | -.01 | 3683 | 30.376 | .0000 | .000 |
| 1198.204 | 632.44 | 629.92 | 6120.00 | 328.47 | .099 | 404.39 | 12935.53 | 10894.61 | 141.41 | -.01 | 3683 | 30.365 | .0000 | .000 |
| 1213.204 | 632.33 | 629.81 | 6120.00 | 329.52 | .100 | 404.97 | 12969.60 | 11029.94 | 141.60 | -.01 | 3683 | 30.354 | .0000 | .000 |
| 1228.204 | 632.22 | 629.70 | 6120.00 | 330.57 | .100 | 405.55 | 13003.67 | 11165.27 | 141.79 | -.01 | 3683 | 30.343 | .0000 | .000 |
| 1243.204 | 632.11 | 629.59 | 6120.00 | 331.62 | .101 | 406.13 | 13037.74 | 11300.60 | 141.98 | -.01 | 3683 | 30.332 | .0000 | .000 |
| 1258.204 | 632.00 | 629.48 | 6120.00 | 332.67 | .101 | 406.71 | 13071.81 | 11435.93 | 142.17 | -.01 | 3683 | 30.321 | .0000 | .000 |
| 1273.204 | 631.89 | 629.37 | 6120.00 | 333.72 | .102 | 407.29 | 13105.88 | 11571.26 | 142.36 | -.01 | 3683 | 30.310 | .0000 | .000 |
| 1288.204 | 631.78 | 629.26 | 6120.00 | 334.77 | .102 | 407.87 | 13139.95 | 11706.59 | 142.55 | -.01 | 3683 | 30.299 | .0000 | .000 |
| 1303.204 | 631.67 | 629.15 | 6120.00 | 335.82 | .103 | 408.45 | 13174.02 | 11841.92 | 142.74 | -.01 | 3683 | 30.288 | .0000 | .000 |
| 1318.204 | 631.56 | 629.04 | 6120.00 | 336.87 | .103 | 409.03 | 13208.09 | 11977.25 | 142.93 | -.01 | 3683 | 30.277 | .0000 | .000 |
| 1333.204 | 631.45 | 628.93 | 6120.00 | 337.92 | .104 | 409.61 | 13242.16 | 12112.58 | 143.12 | -.01 | 3683 | 30.266 | .0000 | .000 |
| 1348.204 | 631.34 | 628.82 | 6120.00 | 338.97 | .104 | 410.19 | 13276.23 | 12247.91 | 143.31 | -.01 | 3683 | 30.255 | .0000 | .000 |
| 1363.204 | 631.23 | 628.71 | 6120.00 | 340.02 | .105 | 410.77 | 13310.30 | 12383.24 | 143.50 | -.01 | 3683 | 30.244 | .0000 | .000 |
| 1378.204 | 631.12 | 628.60 | 6120.00 | 341.07 | .105 | 411.35 | 13344.37 | 12518.57 | 143.69 | -.01 | 3683 | 30.233 | .0000 | .000 |
| 1393.204 | 631.01 | 628.49 | 6120.00 | 342.12 | .106 | 411.93 | 13378.44 | 12653.90 | 143.88 | -.01 | 3683 | 30.222 | .0000 | .000 |
| 1408.204 | 630.90 | 628.38 | 6120.00 | 343.17 | .106 | 412.51 | 13412.51 | 12789.23 | 144.07 | -.01 | 3683 | 30.211 | .0000 | .000 |
| 1423.204 | 630.79 | 628.27 | 6120.00 | 344.22 | .107 | 413.09 | 13446.58 | 12924.56 | 144.26 | -.01 | 3683 | 30.200 | .0000 | .000 |
| 1438.204 | 630.68 | 628.16 | 6120.00 | 345.27 | .107 | 413.67 | 13480.65 | 13059.89 | 144.45 | -.01 | 3683 | 30.189 | .0000 | .000 |
| 1453.204 | 630.57 | 628.05 | 6120.00 | 346.32 | .108 | 414.25 | 13514.72 | 13195.22 | 144.64 | -.01 | 3683 | 30.178 | .0000 | .000 |
| 1468.204 | 630.46 | 627.94 | 6120.00 | 347.37 | .108 | 414.83 | 13548.79 | 13330.55 | 144.83 | -.01 | 3683 | 30.167 | .0000 | .000 |
| 1483.204 | 630.35 | 627.83 | 6120.00 | 348.42 | .109 | 415.41 | 13582.86 | 13465.88 | 145.02 | -.01 | 3683 | 30.156 | .0000 | .000 |
| 1498.204 | 630.24 | 627.72 | 6120.00 | 349.47 | .109 | 415.99 | 13616.93 | 13601.21 | 145.21 | -.01 | 3683 | 30.145 | .0000 | .000 |
| 1513.204 | 630.13 | 627.61 | 6120.00 | 350.52 | .110 | 416.57 | 13651.00 | 13736.54 | 145.40 | -.01 | 3683 | 30.134 | .0000 | .000 |
| 1528.204 | 630.02 | 627.50 | 6120.00 | 351.57 | .110 | 417.15 | 13685.07 | 13871.87 | 145.59 | -.01 | 3683 | 30.123 | .0000 | .000 |
| 1543.204 | 629.91 | 627.39 | 6120.00 | 352.62 | .111 | 417.73 | 13719.14 | 14007.20 | 145.78 | -.01 | 3683 | 30.112 | .0000 | .000 |
| 1558.204 | 629.80 | 627.28 | 6120.00 | 353.67 | .111 | 418.31 | 13753.21 | 14142.53 | 145.97 | -.01 | 3683 | 30.101 | .0000 | .000 |
| 1573.204 | 629.69 | 627.17 | 6120.00 | 354.72 | .112 | 418.89 | 13787.28 | 14277.86 | 146.16 | -.01 | 3683 | 30.090 | .0000 | .000 |
| 1588.204 | 629.58 | 627.06 | 6120.00 | 355.77 | .112 | 419.47 | 13821.35 | 14413.19 | 146.35 | -.01 | 3683 | 30.079 | .0000 | .000 |
| 1603.204 | 629.47 | 626.95 | 6120.00 | 356.82 | .113 | 420.05 | 13855.42 | 14548.52 | 146.54 | -.01 | 3683 | 30.068 | .0000 | .000 |
| 1618.204 | 629.36 | 626.84 | 6120.00 | 357.87 | .113 | 420.63 | 13889.49 | 14683.85 | 146.73 | -.01 | 3683 | 30.057 | .0000 | .000 |
| 1633.204 | 629.25 | 626.73 | 6120.00 | 358.92 | .114 | 421.21 | 13923.56 | 14819.18 | 146.92 | -.01 | 3683 | 30.046 | .0000 | .000 |
| 1648.204 | 629.14 | 626.62 | 6120.00 | 359.97 | .114 | 421.79 | 13957.63 | 14954.51 | 147.11 | -.01 | 3683 | 30.035 | .0000 | .000 |
| 1663.204 | 629.03 | 626.51 | 6120.00 | 361.02 | .115 | 422.37 | 13991.70 | 15089.84 | 147.30 | -.01 | 3683 | 30.024 | .0000 | .000 |
| 1678.204 | 628.92 | 626.40 | 6120.00 | 362.07 | .115 | 422.95 | 14025.77 | 15225.17 | 147.49 | -.01 | 3683 | 30.013 | .0000 | .000 |
| 1693.204 | 628.81 | 626.29 | 6120.00 | 363.12 | .116 | 423.53 | 14059.84 | 15360.50 | 147.68 | -.01 | 3683 | 30.002 | .0000 | .000 |
| 1708.204 | 628.70 | 626.18 | 6120.00 | 364.17 | .116 | 424.11 | 14093.91 | 15495.83 | 147.87 | -.01 | 3683 | 29.991 | .0000 | .000 |
| 1723.204 | 628.59 | 626.07 | 6120.00 | 365.22 | .117 | 424.69 | 14127.98 | 15631.16 | 148.06 | -.01 | 3683 | 29.980 | .0000 | .000 |
| 1738.204 | 628.48 | 625.96 | 6120.00 | 366.27 | .117 | 425.27 | 14162.05 | 15766.49 | 148.25 | -.01 | 3683 | 29.969 | .0000 | .000 |
| 1753.204 | 628.37 | 625.85 | 6120.00 | 367.32 | .    |        |          |          |        |      |      |        |       |      |

| SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | #SLOT<br>LB/SEC |
|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FOREWARD                             | 1.1676+02  | 6.3811+02 | 6.3850+02   | 6.1248+03   | 4.1216+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 1.2955+03       |
| AFT                                  | 1.1677+02  | 6.3811+02 | 6.3800+02   | 6.1248+03   | 4.1216+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 1.2955+03       |

GAS BUILDUP IN SLOT, DW/DT = -3.1863-04

|          |           |           |           |           |           |           |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FOREWARD | 4.2705+02 | 6.3721+02 | 6.3628+02 | 6.1237+03 | 1.3090+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.0847+03 |
| AFT      | 4.2706+02 | 6.3752+02 | 6.3659+02 | 6.1242+03 | 1.3085+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.0847+03 |

GAS BUILDUP IN SLOT, DW/DT = -3.1670-04

|          |           |           |           |           |           |           |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FOREWARD | 7.4634+02 | 6.3568+02 | 6.3304+02 | 6.1215+03 | 2.1956+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.8190+03 |
| AFT      | 7.4535+02 | 6.3649+02 | 6.3385+02 | 6.1227+03 | 2.1933+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.8190+03 |

GAS BUILDUP IN SLOT, DW/DT = -3.1589-04

|                                  |           |              |      |        |             |          |             |               |                |       |       |            |              |
|----------------------------------|-----------|--------------|------|--------|-------------|----------|-------------|---------------|----------------|-------|-------|------------|--------------|
| *PARTON*                         | TIME=     | 81.50        | IS=1 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1046.17 | AINCHI=1040.79 | DELZ= | 5.381 | ALP=448.04 | ALPHI=447.04 |
| *PARTON*                         | TIME=     | 81.50        | IS=2 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1045.25 | AINCHI=1040.79 | DELZ= | 4.454 | ALP=448.07 | ALPHI=447.25 |
| *PARTON*                         | TIME=     | 81.50        | IS=3 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1045.43 | AINCHI=1040.79 | DELZ= | 4.640 | ALP=448.06 | ALPHI=447.21 |
| *PARTON*                         | TIME=     | 81.50        | IS=4 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1046.40 | AINCHI=1040.79 | DELZ= | 5.608 | ALP=448.03 | ALPHI=446.99 |
| *PARTON*                         | TIME=     | 81.50        | IS=5 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.58 | AINCHI=1040.79 | DELZ= | 6.787 | ALP=448.00 | ALPHI=446.73 |
| *PARTON*                         | TIME=     | 81.50        | IS=6 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.88 | AINCHI=1040.79 | DELZ= | 7.094 | ALP=447.99 | ALPHI=446.66 |
| *PARTON*                         | TIME=     | 81.50        | IS=7 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.83 | AINCHI=1040.79 | DELZ= | 7.037 | ALP=447.99 | ALPHI=446.67 |
| *PARTON*                         | TIME=     | 81.50        | IS=8 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.45 | AINCHI=1040.79 | DELZ= | 6.664 | ALP=448.00 | ALPHI=446.76 |
| *PARTON*                         | TIME=     | 81.50        | IS=1 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1046.17 | AINCHI=1040.79 | DELZ= | 5.381 | ALP=448.04 | ALPHI=447.04 |
| *PARTON*                         | TIME=     | 81.50        | IS=2 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1045.25 | AINCHI=1040.79 | DELZ= | 4.454 | ALP=448.07 | ALPHI=447.25 |
| *PARTON*                         | TIME=     | 81.50        | IS=3 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1045.43 | AINCHI=1040.79 | DELZ= | 4.640 | ALP=448.06 | ALPHI=447.21 |
| *PARTON*                         | TIME=     | 81.50        | IS=4 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1046.40 | AINCHI=1040.79 | DELZ= | 5.608 | ALP=448.03 | ALPHI=446.99 |
| *PARTON*                         | TIME=     | 81.50        | IS=5 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.58 | AINCHI=1040.79 | DELZ= | 6.787 | ALP=448.00 | ALPHI=446.73 |
| *PARTON*                         | TIME=     | 81.50        | IS=6 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.88 | AINCHI=1040.79 | DELZ= | 7.094 | ALP=447.99 | ALPHI=446.66 |
| *PARTON*                         | TIME=     | 81.50        | IS=7 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.83 | AINCHI=1040.79 | DELZ= | 7.037 | ALP=447.99 | ALPHI=446.67 |
| *PARTON*                         | TIME=     | 81.50        | IS=8 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.45 | AINCHI=1040.79 | DELZ= | 6.664 | ALP=448.00 | ALPHI=446.76 |
| *PARTON*                         | TIME=     | 81.50        | IS=1 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1046.17 | AINCHI=1040.79 | DELZ= | 5.381 | ALP=448.04 | ALPHI=447.04 |
| *PARTON*                         | TIME=     | 81.50        | IS=2 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1045.25 | AINCHI=1040.79 | DELZ= | 4.454 | ALP=448.07 | ALPHI=447.25 |
| *PARTON*                         | TIME=     | 81.50        | IS=3 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1045.43 | AINCHI=1040.79 | DELZ= | 4.640 | ALP=448.06 | ALPHI=447.21 |
| *PARTON*                         | TIME=     | 81.50        | IS=4 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1046.40 | AINCHI=1040.79 | DELZ= | 5.608 | ALP=448.03 | ALPHI=446.99 |
| *PARTON*                         | TIME=     | 81.50        | IS=5 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.58 | AINCHI=1040.79 | DELZ= | 6.787 | ALP=448.00 | ALPHI=446.73 |
| *PARTON*                         | TIME=     | 81.50        | IS=6 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.88 | AINCHI=1040.79 | DELZ= | 7.094 | ALP=447.99 | ALPHI=446.66 |
| *PARTON*                         | TIME=     | 81.50        | IS=7 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.83 | AINCHI=1040.79 | DELZ= | 7.037 | ALP=447.99 | ALPHI=446.67 |
| *PARTON*                         | TIME=     | 81.50        | IS=8 | ZCALC( | 79)=1055.79 | ZCALC(   | 78)=1040.79 | AINCW=1047.45 | AINCHI=1040.79 | DELZ= | 6.664 | ALP=448.00 | ALPHI=446.76 |
| WEB BURNOUT INCREMENT LOCATION = | 1040.7910 | SECTOR NO. = | 2    | TAU =  | 31.0240     | TAUWOP = | 31.0240     | TIME =        | 81.50          |       |       |            |              |
| WEB BURNOUT INCREMENT LOCATION = | 1040.7910 | SECTOR NO. = | 3    | TAU =  | 31.0240     | TAUWOP = | 31.0240     | TIME =        | 81.50          |       |       |            |              |
| *PARTON*                         | TIME=     | 82.00        | IS=1 | ZCALC( | 78)=1034.78 | ZCALC(   | 77)=1034.78 | AINCW=1040.97 | AINCHI=1034.78 | DELZ= | 6.186 | ALP=448.20 | ALPHI=446.42 |
| *PARTON*                         | TIME=     | 82.00        | IS=2 | ZCALC( | 78)=1034.78 | ZCALC(   | 77)=1034.78 | AINCW=1040.31 | AINCHI=1034.78 | DELZ= | 5.527 | ALP=448.21 | ALPHI=446.64 |
| *PARTON*                         | TIME=     | 82.00        | IS=3 | ZCALC( | 78)=1034.78 | ZCALC(   | 77)=1034.78 | AINCW=1040.44 | AINCHI=1034.78 | DELZ= | 5.658 | ALP=448.21 | ALPHI=446.80 |
| *PARTON*                         | TIME=     | 82.00        | IS=4 | ZCALC( | 78)=1034.78 | ZCALC(   | 77)=1034.78 | AINCW=1041.26 | AINCHI=1034.78 | DELZ= | 4.472 | ALP=448.19 | ALPHI=448.16 |
| *PARTON*                         | TIME=     | 82.00        | IS=5 | ZCALC( | 78)=1034.78 | ZCALC(   | 77)=1034.78 | AINCW=1042.46 | AINCHI=1034.78 | DELZ= | 1.669 | ALP=448.15 | ALPHI=447.89 |

•PARTBN• TIME= 82.00 IS=6 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.77 AINCHI=1040.79 DELZ= 1.979 ALP=448.14 ALPHI=447.82  
•PARTBN• TIME= 82.00 IS=7 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.71 AINCHI=1040.79 DELZ= 1.921 ALP=448.14 ALPHI=447.83  
•PARTBN• TIME= 82.00 IS=8 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.33 AINCHI=1040.79 DELZ= 1.544 ALP=448.15 ALPHI=447.91  
•PARTBN• TIME= 82.00 IS=1 ZCALC( 78)=1040.79 ZCALC( 77)=1034.78 AINCW=1040.97 AINCHI=1034.78 DELZ= 6.186 ALP=448.20 ALPHI=446.42  
•PARTBN• TIME= 82.00 IS=2 ZCALC( 78)=1040.79 ZCALC( 77)=1034.78 AINCW=1040.31 AINCHI=1034.78 DELZ= 5.527 ALP=448.21 ALPHI=446.64  
•PARTBN• TIME= 82.00 IS=3 ZCALC( 78)=1040.79 ZCALC( 77)=1034.78 AINCW=1040.44 AINCHI=1034.78 DELZ= 5.658 ALP=448.21 ALPHI=446.60  
•PARTBN• TIME= 82.00 IS=4 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1041.24 AINCHI=1040.79 DELZ= 0.472 ALP=448.19 ALPHI=448.16  
•PARTBN• TIME= 82.00 IS=5 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.46 AINCHI=1040.79 DELZ= 1.669 ALP=448.15 ALPHI=447.59  
•PARTBN• TIME= 82.00 IS=6 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.77 AINCHI=1040.79 DELZ= 1.979 ALP=448.14 ALPHI=447.82  
•PARTBN• TIME= 82.00 IS=7 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.71 AINCHI=1040.79 DELZ= 1.921 ALP=448.14 ALPHI=447.83  
•PARTBN• TIME= 82.00 IS=8 ZCALC( 79)=1055.79 ZCALC( 78)=1040.79 AINCW=1042.33 AINCHI=1040.79 DELZ= 1.544 ALP=448.15 ALPHI=447.91

IGNITION TIME, TIME (S)

82.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 10865304.     | 2442617.5    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 10942265.     | 2459919.1    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 50282.296     | 11303.910    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOTI               | .92731268+09  | .20846818+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 256.84135     | 256.84135    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .97635523+09  | .21949339+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6249155     | 1.6249155    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 4317.3320     | 9518.0879    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 384188.15     | 846989.89    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 26.986144     | 59.494263    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 1063.1527     | 2343.8504    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 262.97635     | 427614.17    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 69.693318     | 4252947.2    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 121341.49     | 267512.19    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1256.5996     | 2776.3278    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1597505     | 1.1597505    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.852317     | 28.334510    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1559.8034     | 5117.4651    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .94613743-01  | .94613743-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .43472286+09  | 630.51221    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .41196337+11  | 59750.236    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 6.9023364     | 10698.643    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .93563871-02  | .36836170    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .80039832     | 31.511745    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 1.4563330     | 88870.891    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 53.647499     | 3273771.2    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3401.7583     | 6123.1649    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 256.07402     | 396915.53    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VPCYL                | 68.235020     | 4163956.4    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 219.98764     | 13424469.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .42694138+09  | 619.22612    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .38981262+11  | 56537.541    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(INI+1,1)         | .93471881-02  | .36799953    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(INI+2,1)         | .93391730-02  | .36768398    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(INI+1,1)        | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(INI+2,1)        | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(INI+2,3)        | 3400.2862     | 6120.5152    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5772778     | 2444.7856    |
| EXPANSION RATIO                                                 | EPR                  | 6.8145984     | 6.8145984    |
| PRESSURE RATIO                                                  | PEPO                 | .23063591-01  | .23063591-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | INCHES   | SQ. IN. | WDOT   | DWDOT  | DW/DT  | RB     | TAU  | RWTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      |        |          |         | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FORE                        | 630.51 | 630.50 | 6123.16 | 11.90  | .003 | 378.41 | 11309.88 | 255.71  | 249.91 | -5.80  | .3682  | 31.512 | .000 | .000   | .000  |
| 15.000                      | 630.50 | 630.50 | 6123.16 | 18.04  | .005 | 378.67 | 11406.36 | 388.35  | 132.64 | .01    | .3682  | 31.472 | .000 | .000   | .000  |
| 30.000                      | 630.50 | 630.48 | 6123.15 | 24.17  | .007 | 378.93 | 11422.92 | 521.09  | 132.73 | .01    | .3682  | 31.468 | .000 | .000   | .000  |
| 45.000                      | 630.49 | 630.46 | 6123.13 | 30.29  | .009 | 379.19 | 11439.25 | 653.91  | 132.82 | .01    | .3681  | 31.463 | .000 | .000   | .000  |
| 60.000                      | 630.48 | 630.44 | 6123.12 | 36.40  | .010 | 379.45 | 11455.66 | 786.83  | 132.91 | .01    | .3681  | 31.459 | .000 | .000   | .000  |
| 75.000                      | 630.47 | 630.42 | 6123.10 | 42.49  | .012 | 379.71 | 11472.04 | 919.84  | 133.00 | .01    | .3681  | 31.454 | .000 | .000   | .000  |
| 90.000                      | 630.46 | 630.39 | 6123.08 | 48.57  | .014 | 379.98 | 11488.40 | 1052.93 | 133.09 | .01    | .3681  | 31.449 | .000 | .000   | .000  |
| 105.000                     | 630.44 | 630.35 | 6123.05 | 54.64  | .015 | 380.24 | 11504.73 | 1186.12 | 133.18 | .01    | .3681  | 31.444 | .000 | .000   | .000  |
| 116.761                     | 630.42 | 630.32 | 6123.03 | 59.39  | .017 | 380.44 | 11517.52 | 1290.61 | 104.48 | .01    | .3681  | 31.439 | .000 | .000   | .000  |
| 116.771                     | 630.42 | 630.32 | 6123.03 | 59.60  | .017 | 338.75 | 11475.85 | 1290.61 | .00    | .00    | .3681  | 31.439 | .000 | .000   | .000  |
| 131.771                     | 630.40 | 630.28 | 6123.00 | 65.30  | .018 | 361.33 | 11470.47 | 1413.28 | 122.64 | .01    | .3681  | 31.440 | .000 | .000   | .000  |
| 143.919                     | 630.39 | 630.24 | 6122.98 | 70.19  | .020 | 379.62 | 11466.13 | 1518.41 | 105.12 | .01    | .3681  | 31.432 | .000 | .000   | .000  |
| 158.919                     | 630.36 | 630.19 | 6122.94 | 76.03  | .022 | 380.55 | 11514.78 | 1651.58 | 133.16 | .01    | .3681  | 31.426 | .000 | .000   | .000  |
| 173.919                     | 630.33 | 630.14 | 6122.91 | 81.84  | .023 | 381.48 | 11563.24 | 1785.07 | 133.48 | .01    | .3681  | 31.421 | .000 | .000   | .000  |
| 188.919                     | 630.30 | 630.08 | 6122.87 | 87.61  | .025 | 382.40 | 11611.50 | 1919.88 | 133.80 | .01    | .3681  | 31.415 | .000 | .000   | .000  |
| 203.919                     | 630.27 | 630.02 | 6122.83 | 93.36  | .026 | 383.33 | 11659.57 | 2053.01 | 134.12 | .01    | .3681  | 31.409 | .000 | .000   | .000  |
| 218.919                     | 630.24 | 629.95 | 6122.79 | 99.08  | .028 | 384.26 | 11707.45 | 2187.46 | 134.44 | .01    | .3680  | 31.403 | .000 | .000   | .000  |
| 233.919                     | 630.20 | 629.88 | 6122.74 | 104.77 | .030 | 385.18 | 11755.13 | 2322.23 | 134.76 | .01    | .3680  | 31.397 | .000 | .000   | .000  |
| 248.919                     | 630.16 | 629.80 | 6122.69 | 110.47 | .031 | 386.11 | 11802.61 | 2457.32 | 135.08 | .01    | .3680  | 31.391 | .000 | .000   | .000  |
| 263.919                     | 630.12 | 629.72 | 6122.64 | 116.06 | .033 | 387.04 | 11849.90 | 2592.73 | 135.40 | .01    | .3680  | 31.384 | .000 | .000   | .000  |
| 278.919                     | 630.07 | 629.64 | 6122.59 | 121.67 | .034 | 387.96 | 11897.00 | 2728.46 | 135.72 | .01    | .3680  | 31.378 | .000 | .000   | .000  |
| 293.919                     | 630.03 | 629.55 | 6122.54 | 127.25 | .036 | 388.89 | 11943.90 | 2864.51 | 136.03 | .01    | .3680  | 31.371 | .000 | .000   | .000  |
| 308.919                     | 629.98 | 629.46 | 6122.48 | 132.81 | .038 | 389.82 | 11990.61 | 3000.87 | 136.35 | .01    | .3679  | 31.365 | .000 | .000   | .000  |
| 323.919                     | 629.93 | 629.37 | 6122.42 | 138.34 | .039 | 390.74 | 12037.12 | 3137.56 | 136.67 | .01    | .3679  | 31.358 | .000 | .000   | .000  |
| 338.919                     | 629.88 | 629.27 | 6122.36 | 143.85 | .041 | 391.67 | 12083.44 | 3274.56 | 136.99 | .02    | .3679  | 31.351 | .000 | .000   | .000  |
| 353.919                     | 629.82 | 629.17 | 6122.30 | 149.33 | .042 | 392.60 | 12129.56 | 3411.88 | 137.30 | .02    | .3679  | 31.344 | .000 | .000   | .000  |
| 368.919                     | 629.77 | 629.06 | 6122.23 | 154.79 | .044 | 393.52 | 12175.49 | 3549.51 | 137.62 | .02    | .3679  | 31.337 | .000 | .000   | .000  |
| 383.919                     | 629.71 | 628.96 | 6122.16 | 160.23 | .045 | 394.45 | 12221.23 | 3687.46 | 137.94 | .02    | .3678  | 31.330 | .000 | .000   | .000  |
| 398.919                     | 629.65 | 628.84 | 6122.09 | 165.65 | .047 | 395.38 | 12266.77 | 3825.73 | 138.25 | .02    | .3678  | 31.323 | .000 | .000   | .000  |
| 413.919                     | 629.63 | 628.81 | 6122.07 | 171.14 | .047 | 395.63 | 12279.27 | 3863.85 | 138.11 | .01    | .3678  | 31.316 | .000 | .000   | .000  |
| 428.919                     | 629.57 | 628.69 | 6121.99 | 176.89 | .049 | 393.77 | 12272.71 | 4002.33 | 138.16 | .02    | .3678  | 31.314 | .000 | .000   | .000  |
| 443.919                     | 629.54 | 628.62 | 6121.94 | 176.89 | .050 | 392.65 | 12268.98 | 4084.65 | 82.61  | .01    | .3678  | 31.308 | .000 | .000   | .000  |
| 458.919                     | 629.50 | 628.58 | 6121.88 | 182.30 | .052 | 391.52 | 12265.23 | 4166.97 | 82.61  | .01    | .3678  | 31.303 | .000 | .000   | .000  |
| 473.919                     | 629.46 | 628.54 | 6121.82 | 187.71 | .053 | 390.39 | 12261.48 | 4249.28 | 82.61  | .01    | .3678  | 31.298 | .000 | .000   | .000  |
| 488.919                     | 629.42 | 628.50 | 6121.76 | 193.12 | .054 | 389.26 | 12257.73 | 4331.59 | 82.61  | .01    | .3678  | 31.293 | .000 | .000   | .000  |
| 503.919                     | 629.38 | 628.46 | 6121.70 | 198.53 | .055 | 388.13 | 12253.98 | 4413.90 | 82.61  | .01    | .3678  | 31.288 | .000 | .000   | .000  |
| 518.919                     | 629.34 | 628.42 | 6121.64 | 203.94 | .056 | 387.00 | 12250.23 | 4496.21 | 82.61  | .01    | .3678  | 31.283 | .000 | .000   | .000  |
| 533.919                     | 629.30 | 628.38 | 6121.58 | 209.35 | .057 | 385.87 | 12246.48 | 4578.52 | 82.61  | .01    | .3678  | 31.278 | .000 | .000   | .000  |
| 548.919                     | 629.26 | 628.34 | 6121.52 | 214.76 | .058 | 384.74 | 12242.73 | 4660.83 | 82.61  | .01    | .3678  | 31.273 | .000 | .000   | .000  |
| 563.919                     | 629.22 | 628.30 | 6121.46 | 220.17 | .059 | 383.61 | 12238.98 | 4743.14 | 82.61  | .01    | .3678  | 31.268 | .000 | .000   | .000  |
| 578.919                     | 629.18 | 628.26 | 6121.40 | 225.58 | .060 | 382.48 | 12235.23 | 4825.45 | 82.61  | .01    | .3678  | 31.263 | .000 | .000   | .000  |
| 593.919                     | 629.14 | 628.22 | 6121.34 | 230.99 | .061 | 381.35 | 12231.48 | 4907.76 | 82.61  | .01    | .3678  | 31.258 | .000 | .000   | .000  |
| 608.919                     | 629.10 | 628.18 | 6121.28 | 236.40 | .062 | 380.22 | 12227.73 | 4990.07 | 82.61  | .01    | .3678  | 31.253 | .000 | .000   | .000  |
| 623.919                     | 629.06 | 628.14 | 6121.22 | 241.81 | .063 | 379.09 | 12223.98 | 5072.38 | 82.61  | .01    | .3678  | 31.248 | .000 | .000   | .000  |
| 638.919                     | 629.02 | 628.10 | 6121.16 | 247.22 | .064 | 377.96 | 12220.23 | 5154.69 | 82.61  | .01    | .3678  | 31.243 | .000 | .000   | .000  |
| 653.919                     | 628.98 | 628.06 | 6121.10 | 252.63 | .065 | 376.83 | 12216.48 | 5237.00 | 82.61  | .01    | .3678  | 31.238 | .000 | .000   | .000  |
| 668.919                     | 628.94 | 628.02 | 6121.04 | 258.04 | .066 | 375.70 | 12212.73 | 5319.31 | 82.61  | .01    | .3678  | 31.233 | .000 | .000   | .000  |
| 683.919                     | 628.90 | 628.00 | 6120.98 | 263.45 | .067 | 374.57 | 12208.98 | 5401.62 | 82.61  | .01    | .3678  | 31.228 | .000 | .000   | .000  |
| 698.919                     | 628.86 | 627.96 | 6120.92 | 268.86 | .068 | 373.44 | 12205.23 | 5483.93 | 82.61  | .01    | .3678  | 31.223 | .000 | .000   | .000  |
| 713.919                     | 628.82 | 627.92 | 6120.86 | 274.27 | .069 | 372.31 | 12201.48 | 5566.24 | 82.61  | .01    | .3678  | 31.218 | .000 | .000   | .000  |
| 728.919                     | 628.78 | 627.88 | 6120.80 | 279.68 | .070 | 371.18 | 12197.73 | 5648.55 | 82.61  | .01    | .3678  | 31.213 | .000 | .000   | .000  |
| 743.919                     | 628.74 | 627.84 | 6120.74 | 285.09 | .071 | 370.05 | 12193.98 | 5730.86 | 82.61  | .01    | .3678  | 31.208 | .000 | .000   | .000  |
| 758.919                     | 628.70 | 627.80 | 6120.68 | 290.50 | .072 | 368.92 | 12190.23 | 5813.17 | 82.61  | .01    | .3678  | 31.203 | .000 | .000   | .000  |
| 773.919                     | 628.66 | 627.76 | 6120.62 | 295.91 | .073 | 367.79 | 12186.48 | 5895.48 | 82.61  | .01    | .3678  | 31.198 | .000 | .000   | .000  |
| 788.919                     | 628.62 | 627.72 | 6120.56 | 301.32 | .074 | 366.66 | 12182.73 | 5977.79 | 82.61  | .01    | .3678  | 31.193 | .000 | .000   | .000  |
| 803.919                     | 628.58 | 627.68 | 6120.50 | 306.73 | .075 | 365.53 | 12178.98 | 6060.10 | 82.61  | .01    | .3678  | 31.188 | .000 | .000   | .000  |
| 818.919                     | 628.54 | 627.64 | 6120.44 | 312.14 | .076 | 364.40 | 12175.23 | 6142.41 | 82.61  | .01    | .3678  | 31.183 | .000 | .000   | .000  |
| 833.919                     | 628.50 | 627.60 | 6120.38 | 317.55 | .077 | 363.27 | 12171.48 | 6224.72 | 82.61  | .01    | .3678  | 31.178 | .000 | .000   | .000  |
| 848.919                     | 628.46 | 627.56 | 6120.32 | 322.96 | .078 | 362.14 | 12167.73 | 6307.03 | 82.61  | .01    | .3678  | 31.173 | .000 | .000   | .000  |
| 863.919                     | 628.42 | 627.52 | 6120.26 | 328.37 | .079 | 361.01 | 12163.98 | 6389.34 | 82.61  | .01    | .3678  | 31.168 | .000 | .000   | .000  |
| 878.919                     | 628.38 | 627.48 | 6120.20 | 333.78 | .080 | 359.88 | 12160.23 | 6471.65 | 82.61  | .01    | .3678  | 31.163 | .000 | .000   | .000  |
| 893.919                     | 628.34 | 627.44 | 6120.14 | 339.19 | .081 | 358.75 | 12156.48 | 6553.96 | 82.61  | .01    | .3678  | 31.158 | .000 | .000   | .000  |
| 908.919                     | 628.30 | 627.40 | 6120.08 | 344.60 | .082 | 357.62 | 12152.73 | 6636.27 | 82.61  | .01    | .3678  | 31.153 | .000 | .000   | .000  |
| 923.919                     | 628.26 | 627.36 | 6120.02 | 350.01 | .083 | 356.49 | 12148.98 | 6718.58 | 82.61  | .01    | .3678  | 31.148 | .000 | .000   | .000  |
| 938.919                     | 628.22 | 627.32 | 6119.96 | 355.42 | .084 | 355.36 | 12145.23 | 6800.89 | 82.61  | .01    | .3678  | 31.143 | .000 | .000   | .000  |
| 953.919                     | 628.18 | 627.28 | 6119.90 | 360.83 | .085 | 354.23 | 12141.48 | 6883.20 | 82.61  | .01    | .3678  | 31.138 | .000 | .000   | .000  |
| 968.919                     | 628.14 | 627.24 | 6119.84 | 366.24 | .086 | 353.10 | 12137.73 | 6965.51 | 82.61  | .01    | .3678  | 31.133 | .000 | .000   | .000  |
| 983.919                     | 628.10 | 627.20 | 6119.78 | 371.65 | .087 | 351.97 | 12133.98 | 7047.82 | 82.61  | .01    | .3678  | 31.128 | .000 | .000   | .000  |
| 998.919                     | 628.06 | 627.16 | 6119.72 | 377.06 | .088 | 350.84 | 12130.23 | 7130.13 | 82.61  | .01    | .3678  | 31.123 | .000 | .000   | .000  |
| 1013.919                    | 628.02 | 627.12 | 6119.66 | 382.47 | .089 | 349.71 | 12126.48 | 7212.44 | 82.61  | .01    | .3678  | 31.118 | .000 | .000   | .000  |
| 1028.919                    | 627.98 | 627.08 | 6119.60 | 387.88 | .090 | 348.58 | 12122.73 | 7294.75 | 82.61  | .01    | .3678  | 31.113 | .000 | .000   | .000  |
| 1043.919                    | 627.94 | 627.04 | 6119.54 | 393.29 | .091 |        |          |         |        |        |        |        |      |        |       |

|          |        |        |         |        |      |        |          |         |        |      |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|------|-------|--------|-------|------|
| 628.204  | 628.95 | 626.97 | 6120.52 | 259.90 | .074 | 384.69 | 11702.76 | 5749.99 | 134.44 | -.01 | .3675 | 31.146 | .0000 | .000 |
| 643.204  | 628.04 | 626.79 | 6120.41 | 265.28 | .075 | 385.27 | 11817.61 | 5884.64 | 134.63 | -.01 | .3674 | 31.136 | .0000 | .000 |
| 658.204  | 628.74 | 626.60 | 6120.30 | 270.64 | .077 | 385.84 | 11852.32 | 6019.47 | 134.82 | -.01 | .3674 | 31.126 | .0000 | .000 |
| 673.204  | 628.63 | 626.41 | 6120.18 | 275.99 | .080 | 386.42 | 11886.91 | 6154.49 | 135.01 | -.02 | .3673 | 31.116 | .0000 | .000 |
| 688.204  | 628.52 | 626.21 | 6120.07 | 281.32 | .081 | 387.00 | 11921.36 | 6289.70 | 135.19 | -.02 | .3673 | 31.105 | .0000 | .000 |
| 703.204  | 628.41 | 626.01 | 6119.95 | 286.63 | .083 | 387.57 | 11955.68 | 6425.09 | 135.38 | -.02 | .3673 | 31.095 | .0000 | .000 |
| 718.204  | 628.29 | 625.81 | 6119.83 | 291.94 | .084 | 388.15 | 11989.87 | 6560.67 | 135.56 | -.02 | .3672 | 31.085 | .0000 | .000 |
| 728.191  | 628.23 | 625.70 | 6119.76 | 297.76 | .084 | 388.45 | 12020.02 | 6696.05 | 136.09 | -.02 | .3671 | 31.069 | .0000 | .000 |
| 741.191  | 628.07 | 625.49 | 6119.69 | 297.84 | .084 | 390.44 | 12131.24 | 6769.05 | 136.09 | -.02 | .3671 | 31.069 | .0000 | .000 |
| 746.336  | 628.02 | 625.41 | 6119.66 | 298.90 | .085 | 391.12 | 12173.18 | 6815.89 | 136.09 | -.01 | .3671 | 31.063 | .0000 | .000 |
| 748.346  | 627.93 | 626.17 | 6120.82 | 244.43 | .069 | 180.22 | 14070.63 | 6815.89 | .00    | -.00 | .3672 | 31.112 | .0000 | .000 |
| 761.346  | 628.12 | 626.11 | 6120.47 | 262.46 | .074 | 244.86 | 14001.43 | 6870.41 | 74.29  | -.24 | .3672 | 31.112 | .0000 | .000 |
| 776.346  | 628.35 | 626.00 | 6120.01 | 283.87 | .080 | 309.49 | 13129.11 | 6987.45 | 96.88  | -.16 | .3672 | 31.088 | .0000 | .000 |
| 791.346  | 628.63 | 625.84 | 6119.41 | 309.40 | .088 | 374.12 | 12253.67 | 7106.99 | 119.46 | -.08 | .3672 | 31.058 | .0000 | .000 |
| 794.631  | 628.70 | 625.79 | 6119.25 | 316.02 | .090 | 389.14 | 12049.82 | 7137.98 | 130.99 | -.01 | .3672 | 31.022 | .0000 | .000 |
| 809.831  | 628.56 | 625.57 | 6119.03 | 325.52 | .091 | 390.12 | 12111.42 | 7274.16 | 136.16 | -.02 | .3672 | 31.017 | .0000 | .000 |
| 824.831  | 628.42 | 625.34 | 6118.91 | 329.48 | .092 | 391.09 | 12172.59 | 7410.67 | 136.49 | -.02 | .3671 | 31.007 | .0000 | .000 |
| 839.831  | 628.28 | 625.11 | 6118.80 | 333.93 | .093 | 392.07 | 12233.34 | 7547.50 | 136.81 | -.02 | .3671 | 30.994 | .0000 | .000 |
| 854.781  | 628.13 | 624.88 | 6118.80 | 333.93 | .095 | 393.05 | 12293.48 | 7684.20 | 136.68 | -.02 | .3670 | 30.988 | .0000 | .000 |
| 869.781  | 627.82 | 624.64 | 6118.89 | 330.22 | .094 | 397.47 | 12659.65 | 7822.29 | 138.06 | -.03 | .3670 | 30.978 | .0000 | .000 |
| 884.781  | 627.53 | 624.41 | 6118.97 | 327.10 | .093 | 401.91 | 13013.55 | 7961.91 | 139.58 | -.04 | .3669 | 30.985 | .0000 | .000 |
| 899.781  | 627.26 | 624.19 | 6119.04 | 324.50 | .092 | 406.36 | 13355.18 | 8103.06 | 141.11 | -.04 | .3668 | 30.989 | .0000 | .000 |
| 914.781  | 627.00 | 623.97 | 6119.09 | 322.39 | .091 | 410.80 | 13684.54 | 8245.75 | 142.63 | -.05 | .3667 | 30.992 | .0000 | .000 |
| 929.781  | 626.75 | 623.76 | 6119.13 | 320.71 | .091 | 415.24 | 14001.63 | 8389.96 | 144.15 | -.06 | .3667 | 30.994 | .0000 | .000 |
| 944.781  | 626.52 | 623.55 | 6119.17 | 319.43 | .091 | 419.67 | 14326.45 | 8535.69 | 145.67 | -.07 | .3666 | 30.995 | .0000 | .000 |
| 959.781  | 626.30 | 623.35 | 6119.19 | 318.54 | .090 | 424.11 | 14598.99 | 8682.97 | 147.20 | -.08 | .3666 | 30.995 | .0000 | .000 |
| 974.781  | 626.08 | 623.14 | 6119.20 | 318.00 | .090 | 428.55 | 14879.27 | 8831.81 | 148.75 | -.09 | .3666 | 30.995 | .0000 | .000 |
| 989.781  | 625.88 | 622.94 | 6119.21 | 317.80 | .090 | 432.98 | 15147.27 | 8982.25 | 150.35 | -.10 | .3668 | 30.994 | .0000 | .000 |
| 1004.781 | 625.68 | 622.74 | 6119.20 | 317.92 | .090 | 437.42 | 15403.00 | 9134.38 | 152.02 | -.11 | .3672 | 30.994 | .0000 | .000 |
| 1019.781 | 625.48 | 622.54 | 6119.19 | 318.35 | .090 | 441.86 | 15646.46 | 9288.28 | 153.79 | -.11 | .3678 | 30.994 | .0000 | .000 |
| 1034.781 | 625.30 | 622.34 | 6119.18 | 319.07 | .090 | 446.30 | 15877.66 | 9444.05 | 155.64 | -.12 | .3687 | 30.995 | .0000 | .000 |
| 1049.791 | 625.23 | 622.27 | 6119.17 | 319.41 | .090 | 448.03 | 15966.84 | 9506.01 | 162.03 | -.06 | .3690 | 30.989 | .0000 | .000 |
| 1055.791 | 625.22 | 622.25 | 6119.16 | 319.86 | .091 | 280.10 | 15961.46 | 9516.07 | 9.90   | -.16 | .3691 | 30.463 | .0000 | .000 |
| 1070.791 | 625.23 | 622.25 | 6119.14 | 320.45 | .091 | .00    | 15932.59 | 9516.34 | .00    | -.26 | .3691 | 29.942 | .0000 | .000 |
| 1084.171 | 625.24 | 622.25 | 6119.13 | 320.78 | .091 | .00    | 15916.89 | 9516.70 | .00    | -.36 | .3691 | 29.459 | .0000 | .000 |
| AF1(A)   | 619.23 | 591.71 | 6083.03 | 986.82 | .280 | .0000  | 15823.73 | 9518.09 | .00    | -.84 | .3680 | 29.460 | .0000 | .000 |
| AF1(B)   | 619.21 | 619.21 | 6120.52 | -.03   | .000 | .0000  | 10413.12 | .55     | .00    | -.55 | .3677 | 20.670 | .0000 | .000 |





•PARTBN• TIME= 83.00 IS=4 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1033.93 AINCHI=1019.78 DELZ=14.154 ALP=448.38 ALPHI=444.25  
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•PARTBN• TIME= 83.00 IS=6 ZCALC( 78)=1040.79 ZCALC( 77)=1034.78 AINCW=1035.00 AINCHI=1034.78 DELZ= 0.217 ALP=448.35 ALPHI=448.35  
•PARTBN• TIME= 83.00 IS=6 ZCALC( 78)=1040.79 ZCALC( 77)=1034.78 AINCW=1033.77 AINCHI=1019.78 DELZ=13.990 ALP=448.39 ALPHI=444.30  
•PARTBN• TIME= 83.00 IS=1 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1033.11 AINCHI=1019.78 DELZ=13.326 ALP=448.40 ALPHI=444.50  
•PARTBN• TIME= 83.00 IS=2 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1033.24 AINCHI=1019.78 DELZ=13.458 ALP=448.40 ALPHI=444.46  
•PARTBN• TIME= 83.00 IS=3 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1033.93 AINCHI=1019.78 DELZ=14.154 ALP=448.38 ALPHI=444.25  
•PARTBN• TIME= 83.00 IS=4 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1034.78 AINCHI=1019.78 DELZ=15.000 ALP=448.36 ALPHI=443.99  
•PARTBN• TIME= 83.00 IS=5 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1034.96 AINCHI=1019.78 DELZ=15.179 ALP=448.35 ALPHI=443.93  
•PARTBN• TIME= 83.00 IS=7 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1034.69 AINCHI=1019.78 DELZ=14.911 ALP=448.36 ALPHI=444.02  
•PARTBN• TIME= 83.00 IS=8 ZCALC( 78)=1040.79 ZCALC( 77)=1034.78 AINCW=1035.00 AINCHI=1034.78 DELZ= 0.217 ALP=448.35 ALPHI=448.35

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| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH     |
|--------------------------------------------|----------------------|---------------|-------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |             |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10773020.     | 2421871.4   |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10844961.     | 2438044.3   |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 53952.586     | 11454.597   |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)        | SRMDT                | 93812994+09   | 21090000+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.80301     | 256.80301   |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)           | SRMVT                | 98724694+09   | 22194194+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6250055     | 1.6250055   |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4278.9033     | 9433.5433   |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 388485.57     | 856464.07   |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 27.345884     | 60.287354   |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 1035.9044     | 2283.7784   |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 261.69907     | 405634.40   |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 67.452443     | 4116200.7   |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 117047.18     | 258044.86   |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1262.3474     | 2782.9997   |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597444     | 1.1597444   |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.851190     | 28.332025   |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.7228     | 5117.2007   |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | 94278256-01   | 94278256-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |             |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 43054489+09   | 624.45141   |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPHDT                | 41628895+11   | 60377.608   |
| BURN AREA (M**2,IN**2)                     | AHH                  | 6.7385805     | 10444.821   |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | 93247341-02   | 36711552    |
| DISTANCE BURNED (M,IN)                     | TAU2(1)              | 80974623      | 31.879773   |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.3926638     | 84985.561   |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 53.711168     | 3277656.6   |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3400.9672     | 6121.7469   |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |             |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 254.96051     | 395189.58   |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | 0.0000000     | 0.0000000   |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 66.357815     | 4031095.2   |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 224.04505     | 13672068.   |
| <b>NOZ END PARAMETERS:</b>                 |                      |               |             |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 42289910+09   | 613.35023   |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPONDY               | 39406104+11   | 57153.722   |
| BURN AREA (M**2,IN**2)                     | AAN                  | 0.0000000     | 0.0000000   |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | 93160582-02   | 36677395    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | 93080616-02   | 36645912    |
| DISTANCE BURNED, REGION A (M,IN)           | TAU2(NI+1,1)         | 74828400      | 29.462000   |
| DISTANCE BURNED, REGION B (M,IN)           | TAU2(NI+2,1)         | 52501800      | 20.670000   |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 19662722-02   | 119.98929   |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0   |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3399.5192     | 6119.1345   |
| PORT AREA, NOZ ENT (M**2,IN**2)            | A2A                  | 10.208839     | 15823.733   |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |             |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5781404     | 2440.1225   |
| EXPANSION RATIO                            | EPR                  | 6.8108737     | 6.8108737   |
| PRESSURE RATIO                             | PEPO                 | 23080502-01   | 23080502-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |             |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | 37810250-01   | 37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ALLOPS               | 2.0000000     | 2.0000000   |

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## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | H    | LP     | AP       | WDOT    | DWDT   | RB     | TAU         | IN/SEC | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|-------------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | IN/SEC | IN.         | IN/SEC | IN.   |
| FORE                        | 624.45 | 624.44 | 6121.74 | 11.47  | .003 | 380.72 | 11529.49 | 247.14  | 243.16 | -3.98  | 3669 31.880 | .0000  | .000  |
| 15.000                      | 624.44 | 624.44 | 6121.73 | 17.61  | .005 | 380.98 | 11546.07 | 380.05  | 133.03 | .08    | 3669 31.840 | .0000  | .000  |
| 30.000                      | 624.44 | 624.42 | 6121.72 | 23.74  | .007 | 381.25 | 11562.62 | 513.06  | 133.09 | .08    | 3669 31.836 | .0000  | .000  |
| 45.000                      | 624.43 | 624.41 | 6121.71 | 29.85  | .008 | 381.51 | 11579.15 | 646.15  | 133.18 | .08    | 3669 31.831 | .0000  | .000  |
| 60.000                      | 624.42 | 624.38 | 6121.70 | 35.95  | .010 | 381.77 | 11595.65 | 779.33  | 133.27 | .08    | 3669 31.826 | .0000  | .000  |
| 75.000                      | 624.41 | 624.36 | 6121.68 | 42.04  | .012 | 382.03 | 11612.13 | 912.61  | 133.36 | .08    | 3669 31.822 | .0000  | .000  |
| 90.000                      | 624.40 | 624.33 | 6121.66 | 48.12  | .014 | 382.29 | 11628.58 | 1045.97 | 133.45 | .08    | 3669 31.817 | .0000  | .000  |
| 105.000                     | 624.38 | 624.29 | 6121.63 | 54.19  | .015 | 382.55 | 11645.01 | 1179.42 | 133.53 | .08    | 3669 31.812 | .0000  | .000  |
| 116.761                     | 624.37 | 624.26 | 6121.61 | 58.94  | .017 | 382.75 | 11657.87 | 1284.11 | 104.76 | .07    | 3669 31.806 | .0000  | .000  |
| 116.771                     | 624.37 | 624.26 | 6121.61 | 59.23  | .017 | 339.50 | 11600.57 | 1284.11 | .00    | .00    | 3669 31.807 | .0000  | .000  |
| 131.771                     | 624.35 | 624.22 | 6121.58 | 64.87  | .018 | 362.95 | 11633.65 | 1406.69 | 122.64 | .06    | 3669 31.807 | .0000  | .000  |
| 143.919                     | 624.33 | 624.19 | 6121.56 | 69.71  | .020 | 381.94 | 11606.17 | 1511.95 | 105.32 | .06    | 3669 31.800 | .0000  | .000  |
| 158.919                     | 624.30 | 624.14 | 6121.52 | 75.55  | .021 | 382.87 | 11655.19 | 1645.39 | 133.52 | .08    | 3669 31.794 | .0000  | .000  |
| 173.919                     | 624.28 | 624.08 | 6121.49 | 81.35  | .023 | 383.79 | 11704.00 | 1779.14 | 133.84 | .08    | 3668 31.788 | .0000  | .000  |
| 188.919                     | 624.25 | 624.03 | 6121.45 | 87.13  | .025 | 384.72 | 11752.62 | 1913.21 | 134.16 | .08    | 3668 31.783 | .0000  | .000  |
| 203.919                     | 624.21 | 623.96 | 6121.41 | 92.88  | .026 | 385.64 | 11801.04 | 2047.61 | 134.48 | .08    | 3668 31.777 | .0000  | .000  |
| 218.919                     | 624.18 | 623.90 | 6121.36 | 98.59  | .028 | 386.57 | 11849.27 | 2182.32 | 134.79 | .08    | 3668 31.771 | .0000  | .000  |
| 233.919                     | 624.14 | 623.83 | 6121.32 | 104.28 | .030 | 387.50 | 11897.29 | 2317.35 | 135.11 | .08    | 3668 31.764 | .0000  | .000  |
| 248.919                     | 624.11 | 623.75 | 6121.27 | 109.94 | .031 | 388.42 | 11945.12 | 2452.69 | 135.43 | .08    | 3668 31.758 | .0000  | .000  |
| 263.919                     | 624.06 | 623.68 | 6121.22 | 115.58 | .033 | 389.35 | 11992.74 | 2588.36 | 135.75 | .08    | 3668 31.752 | .0000  | .000  |
| 278.919                     | 624.02 | 623.59 | 6121.17 | 121.14 | .034 | 390.28 | 12040.18 | 2724.34 | 136.06 | .08    | 3667 31.745 | .0000  | .000  |
| 293.919                     | 623.98 | 623.51 | 6121.12 | 126.77 | .036 | 391.20 | 12087.41 | 2860.64 | 136.38 | .08    | 3667 31.739 | .0000  | .000  |
| 308.919                     | 623.93 | 623.42 | 6121.06 | 132.33 | .037 | 392.13 | 12134.44 | 2997.26 | 136.70 | .08    | 3667 31.732 | .0000  | .000  |
| 323.919                     | 623.88 | 623.33 | 6121.00 | 137.86 | .039 | 393.05 | 12181.28 | 3134.19 | 137.01 | .08    | 3667 31.726 | .0000  | .000  |
| 338.919                     | 623.83 | 623.23 | 6120.94 | 143.37 | .041 | 393.98 | 12227.92 | 3271.44 | 137.33 | .08    | 3667 31.719 | .0000  | .000  |
| 353.919                     | 623.77 | 623.13 | 6120.88 | 148.85 | .042 | 394.91 | 12274.35 | 3409.00 | 137.65 | .08    | 3666 31.712 | .0000  | .000  |
| 368.919                     | 623.72 | 623.03 | 6120.81 | 154.32 | .044 | 395.83 | 12320.60 | 3546.88 | 137.96 | .08    | 3666 31.705 | .0000  | .000  |
| 383.919                     | 623.66 | 622.92 | 6120.74 | 159.76 | .045 | 396.76 | 12366.64 | 3685.08 | 138.28 | .08    | 3666 31.698 | .0000  | .000  |
| 398.919                     | 623.60 | 622.81 | 6120.68 | 165.18 | .047 | 397.68 | 12412.48 | 3823.59 | 138.59 | .08    | 3666 31.691 | .0000  | .000  |
| 403.048                     | 623.58 | 622.77 | 6120.66 | 166.67 | .047 | 397.94 | 12425.07 | 3861.77 | 38.20  | .02    | 3665 31.683 | .0000  | .000  |
| 418.048                     | 623.52 | 622.66 | 6120.58 | 172.77 | .049 | 396.08 | 12417.82 | 4000.19 | 138.50 | .08    | 3665 31.681 | .0000  | .000  |
| 427.051                     | 623.49 | 622.59 | 6120.52 | 176.42 | .050 | 394.96 | 12413.67 | 4082.96 | 82.81  | .05    | 3665 31.675 | .0000  | .000  |
| 427.061                     | 623.45 | 622.87 | 6120.96 | 141.59 | .040 | 67.98  | 15461.99 | 4082.96 | .00    | .00    | 3666 31.700 | .0000  | .000  |
| 442.061                     | 623.58 | 622.85 | 6120.75 | 159.51 | .045 | 197.75 | 13681.54 | 4129.50 | 46.35  | .19    | 3666 31.701 | .0000  | .000  |
| 457.061                     | 623.77 | 622.78 | 6120.40 | 185.10 | .052 | 327.53 | 12228.30 | 4221.18 | 91.63  | .05    | 3666 31.673 | .0000  | .000  |
| 463.204                     | 623.88 | 622.73 | 6120.20 | 198.67 | .056 | 380.68 | 11530.24 | 4271.76 | 50.59  | .02    | 3666 31.632 | .0000  | .000  |
| 478.204                     | 623.80 | 622.59 | 6120.11 | 204.24 | .058 | 381.25 | 11566.75 | 4404.58 | 132.91 | .08    | 3666 31.611 | .0000  | .000  |
| 493.204                     | 623.72 | 622.44 | 6120.02 | 209.80 | .059 | 381.83 | 11603.13 | 4537.60 | 133.10 | .08    | 3665 31.602 | .0000  | .000  |
| 508.204                     | 623.64 | 622.29 | 6119.93 | 215.33 | .061 | 382.40 | 11639.37 | 4670.81 | 133.29 | .08    | 3665 31.592 | .0000  | .000  |
| 523.204                     | 623.55 | 622.14 | 6119.83 | 220.85 | .063 | 382.98 | 11675.44 | 4804.21 | 133.48 | .08    | 3665 31.583 | .0000  | .000  |
| 538.204                     | 623.47 | 621.98 | 6119.74 | 226.34 | .064 | 383.55 | 11711.46 | 4937.79 | 133.67 | .08    | 3664 31.573 | .0000  | .000  |
| 553.204                     | 623.38 | 621.82 | 6119.64 | 231.82 | .066 | 384.13 | 11747.30 | 5071.57 | 133.86 | .08    | 3664 31.563 | .0000  | .000  |
| 568.204                     | 623.29 | 621.65 | 6119.54 | 237.29 | .067 | 384.70 | 11783.01 | 5205.53 | 134.05 | .08    | 3664 31.554 | .0000  | .000  |
| 583.204                     | 623.19 | 621.49 | 6119.43 | 242.73 | .069 | 385.28 | 11818.59 | 5339.69 | 134.23 | .08    | 3663 31.544 | .0000  | .000  |
| 598.204                     | 623.10 | 621.31 | 6119.33 | 248.16 | .070 | 385.85 | 11854.02 | 5474.02 | 134.42 | .08    | 3663 31.534 | .0000  | .000  |
| 613.204                     | 623.07 | 621.14 | 6119.22 | 253.57 | .072 | 386.43 | 11889.33 | 5608.55 | 134.61 | .08    | 3663 31.524 | .0000  | .000  |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|------|
| 628.204  | 622.90 | 620.96 | 6119.12 | 250.96 | .073 | 387.00 | 11924.50 | 5743.27 | 134.79 | .08 | .3662 | 31.514 | .0000 | .000 |
| 643.204  | 622.80 | 620.77 | 6119.00 | 264.34 | .075 | 387.59 | 11954.53 | 5679.17 | 134.98 | .08 | .3662 | 31.503 | .0000 | .000 |
| 658.204  | 622.69 | 620.59 | 6118.89 | 269.71 | .076 | 388.15 | 11994.44 | 6013.25 | 135.17 | .08 | .3661 | 31.493 | .0000 | .000 |
| 673.204  | 622.59 | 620.40 | 6118.78 | 275.06 | .078 | 388.73 | 12029.20 | 6148.53 | 135.35 | .08 | .3661 | 31.483 | .0000 | .000 |
| 688.204  | 622.48 | 620.20 | 6118.66 | 280.39 | .079 | 389.30 | 12063.83 | 6283.99 | 135.54 | .08 | .3661 | 31.472 | .0000 | .000 |
| 703.204  | 622.37 | 620.01 | 6118.54 | 285.71 | .081 | 389.88 | 12098.33 | 6419.63 | 135.72 | .08 | .3660 | 31.462 | .0000 | .000 |
| 718.204  | 622.25 | 619.80 | 6118.42 | 291.02 | .082 | 390.45 | 12132.70 | 6555.46 | 135.91 | .08 | .3660 | 31.452 | .0000 | .000 |
| 733.204  | 622.14 | 619.70 | 6118.36 | 293.84 | .083 | 390.76 | 12150.94 | 6627.06 | 72.44  | .04 | .3659 | 31.441 | .0000 | .000 |
| 748.204  | 622.04 | 619.49 | 6118.29 | 296.95 | .084 | 392.74 | 12274.08 | 6764.21 | 136.43 | .08 | .3659 | 31.435 | .0000 | .000 |
| 763.204  | 621.98 | 619.42 | 6118.26 | 298.02 | .084 | 393.42 | 12317.06 | 6811.14 | 46.95  | .03 | .3659 | 31.430 | .0000 | .000 |
| 778.204  | 621.90 | 620.16 | 6119.38 | 245.54 | .070 | 167.33 | 14934.39 | 6811.14 | .00    | .00 | .3660 | 31.479 | .0000 | .000 |
| 793.204  | 622.09 | 620.09 | 6119.03 | 262.97 | .075 | 236.66 | 14089.67 | 6881.63 | 70.36  | .13 | .3660 | 31.479 | .0000 | .000 |
| 808.204  | 622.30 | 619.98 | 6118.59 | 283.69 | .080 | 306.00 | 13241.90 | 6976.20 | 94.51  | .05 | .3660 | 31.455 | .0000 | .000 |
| 823.204  | 622.57 | 619.82 | 6118.02 | 308.37 | .087 | 375.34 | 12391.11 | 7094.84 | 118.66 | .02 | .3660 | 31.425 | .0000 | .000 |
| 838.204  | 622.63 | 619.77 | 6117.86 | 314.77 | .089 | 391.45 | 12193.00 | 7125.85 | 31.02  | .02 | .3659 | 31.389 | .0000 | .000 |
| 853.204  | 622.50 | 619.55 | 6117.75 | 319.28 | .090 | 392.43 | 12254.95 | 7262.27 | 136.50 | .08 | .3659 | 31.384 | .0000 | .000 |
| 868.204  | 622.36 | 619.33 | 6117.63 | 323.70 | .092 | 393.40 | 12316.47 | 7399.02 | 136.83 | .08 | .3659 | 31.374 | .0000 | .000 |
| 883.204  | 622.21 | 619.10 | 6117.52 | 328.26 | .093 | 394.38 | 12377.56 | 7536.10 | 137.15 | .08 | .3658 | 31.365 | .0000 | .000 |
| 898.204  | 622.07 | 618.87 | 6117.40 | 332.72 | .094 | 395.35 | 12438.03 | 7673.04 | 137.01 | .08 | .3658 | 31.355 | .0000 | .000 |
| 913.204  | 621.77 | 618.64 | 6117.49 | 329.44 | .093 | 399.72 | 12793.22 | 7811.37 | 138.38 | .06 | .3657 | 31.345 | .0000 | .000 |
| 928.204  | 621.49 | 618.41 | 6117.56 | 326.70 | .093 | 404.19 | 13136.46 | 7951.25 | 139.70 | .02 | .3657 | 31.351 | .0000 | .000 |
| 943.204  | 621.23 | 618.19 | 6117.62 | 324.45 | .092 | 408.66 | 13467.75 | 8092.70 | 141.43 | .02 | .3656 | 31.356 | .0000 | .000 |
| 958.204  | 620.98 | 617.96 | 6117.66 | 322.65 | .091 | 413.11 | 13781.09 | 8235.70 | 142.95 | .06 | .3655 | 31.358 | .0000 | .000 |
| 973.204  | 620.74 | 617.76 | 6117.70 | 321.27 | .091 | 417.56 | 14094.47 | 8380.26 | 144.46 | .10 | .3654 | 31.360 | .0000 | .000 |
| 988.204  | 620.51 | 617.56 | 6117.72 | 320.27 | .091 | 422.00 | 14309.93 | 8526.36 | 145.98 | .13 | .3654 | 31.361 | .0000 | .000 |
| 1003.204 | 620.29 | 617.35 | 6117.74 | 319.63 | .091 | 426.44 | 14673.38 | 8674.04 | 147.51 | .16 | .3654 | 31.361 | .0000 | .000 |
| 1018.204 | 620.08 | 617.15 | 6117.75 | 319.33 | .090 | 430.87 | 14944.91 | 8823.32 | 149.09 | .19 | .3655 | 31.361 | .0000 | .000 |
| 1033.204 | 619.88 | 616.94 | 6117.75 | 319.35 | .090 | 435.30 | 15204.48 | 8974.26 | 150.71 | .23 | .3658 | 31.361 | .0000 | .000 |
| 1048.204 | 619.68 | 616.74 | 6117.74 | 319.68 | .091 | 439.73 | 15452.10 | 9126.92 | 152.41 | .26 | .3662 | 31.361 | .0000 | .000 |
| 1063.204 | 619.49 | 616.54 | 6117.72 | 320.31 | .091 | 444.17 | 15687.77 | 9281.41 | 154.20 | .28 | .3670 | 31.362 | .0000 | .000 |
| 1078.204 | 619.32 | 616.35 | 6117.70 | 321.18 | .091 | 448.38 | 15962.49 | 9431.16 | 149.55 | .20 | .3679 | 31.330 | .0000 | .000 |
| 1093.204 | 619.28 | 616.35 | 6117.75 | 319.29 | .090 | 56.04  | 15997.77 | 9431.61 | .28    | .17 | .3678 | 31.024 | .0000 | .000 |
| 1108.204 | 619.29 | 616.35 | 6117.73 | 319.86 | .091 | .00    | 15964.84 | 9431.94 | .00    | .33 | .3678 | 30.483 | .0000 | .000 |
| 1123.204 | 619.30 | 616.35 | 6117.72 | 320.43 | .091 | .00    | 15941.80 | 9432.26 | .00    | .33 | .3678 | 29.942 | .0000 | .000 |
| 1138.204 | 619.31 | 616.35 | 6117.71 | 320.94 | .091 | .00    | 15916.69 | 9432.55 | .00    | .29 | .3678 | 29.459 | .0000 | .000 |
| 1153.204 | 613.35 | 586.07 | 6081.60 | 987.33 | .281 | .0000  | 15823.73 | 9433.54 | .00    | .60 | .3668 | 29.460 | .0000 | .000 |
| 1168.204 | 613.34 | 613.34 | 6119.13 | -1.02  | .000 | .0000  | 16413.12 | .39     | .00    | .39 | .3665 | 20.670 | .0000 | .000 |

DATE 071076

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| SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU.<br>IN. | WSLOT<br>LB/SEC |
|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|----------------------|-----------------|
| FORWARD                              | 1.1576+02  | 6.2437+02 | 6.2426+02   | 6.1216+03   | 4.1741+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000               | 1.2841+03       |
| AFT                                  | 1.1677+02  | 6.2436+02 | 6.2426+02   | 6.1216+03   | 4.1741+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000               | 1.2841+03       |

GAS BUILDUP IN SLOT, DW/DT = -2.3062-04

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 6.2349+02 | 6.2259+02 | 6.1205+03 | 1.3368+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.0830+03 |
| AFT     | 4.2706+02 | 6.2378+02 | 6.2287+02 | 6.1210+03 | 1.3363+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.0830+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.2898-04

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 6.2198+02 | 6.1942+02 | 6.1183+03 | 2.2406+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.8111+03 |
| AFT     | 7.4635+02 | 6.2273+02 | 6.2016+02 | 6.1194+03 | 2.2383+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.8111+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.2825-04

| ALC BURNOUT INCREMENT LOCATION                                                                                                  | SECTOR NO.   | TAU           | TAUWOP           | TIME         |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|------------------|--------------|
| ALC BURNOUT INCREMENT LOCATION = 1034.7810                                                                                      | SECTOR NO. 6 | TAU = 31.3322 | TAUWOP = 31.3322 | TIME = 83.00 |
| ALC BURNOUT INCREMENT LOCATION = 1034.7810                                                                                      | SECTOR NO. 7 | TAU = 31.3322 | TAUWOP = 31.3322 | TIME = 83.00 |
| •PARTBN TIME= 83.50 IS=1 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1030.20 AINCHI=1019.78 DELZ=10.415 ALP=448.48 ALPHI=445.45 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=2 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1029.53 AINCHI=1019.78 DELZ=9.747 ALP=448.50 ALPHI=445.66  |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=3 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1029.66 AINCHI=1019.78 DELZ=9.080 ALP=448.50 ALPHI=445.62  |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=4 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1030.36 AINCHI=1019.78 DELZ=10.581 ALP=448.48 ALPHI=445.41 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=5 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.21 AINCHI=1019.78 DELZ=11.432 ALP=448.45 ALPHI=445.14 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=6 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.43 AINCHI=1019.78 DELZ=11.651 ALP=448.45 ALPHI=445.07 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=7 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.39 AINCHI=1019.78 DELZ=11.612 ALP=448.45 ALPHI=445.08 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=8 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.12 AINCHI=1019.78 DELZ=11.342 ALP=448.46 ALPHI=445.17 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=1 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1030.20 AINCHI=1019.78 DELZ=10.415 ALP=448.48 ALPHI=445.45 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=2 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1029.53 AINCHI=1019.78 DELZ=9.747 ALP=448.50 ALPHI=445.66  |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=3 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1029.66 AINCHI=1019.78 DELZ=9.080 ALP=448.50 ALPHI=445.62  |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=4 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1030.36 AINCHI=1019.78 DELZ=10.581 ALP=448.48 ALPHI=445.41 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=5 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.21 AINCHI=1019.78 DELZ=11.432 ALP=448.45 ALPHI=445.14 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=6 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.43 AINCHI=1019.78 DELZ=11.651 ALP=448.45 ALPHI=445.07 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=7 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.39 AINCHI=1019.78 DELZ=11.612 ALP=448.45 ALPHI=445.08 |              |               |                  |              |
| •PARTBN TIME= 83.50 IS=8 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1031.12 AINCHI=1019.78 DELZ=11.342 ALP=448.46 ALPHI=445.17 |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=1 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.62 AINCHI=1019.78 DELZ=6.844 ALP=448.58 ALPHI=446.61  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=2 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.95 AINCHI=1019.78 DELZ=6.170 ALP=448.59 ALPHI=446.82  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=3 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.09 AINCHI=1019.78 DELZ=6.305 ALP=448.59 ALPHI=446.78  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=4 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.79 AINCHI=1019.78 DELZ=7.011 ALP=448.57 ALPHI=446.56  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=5 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1027.65 AINCHI=1019.78 DELZ=7.868 ALP=448.55 ALPHI=446.29  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=6 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1027.87 AINCHI=1019.78 DELZ=8.089 ALP=448.54 ALPHI=446.22  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=7 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1027.83 AINCHI=1019.78 DELZ=8.050 ALP=448.54 ALPHI=446.23  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=8 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1027.56 AINCHI=1019.78 DELZ=7.777 ALP=448.55 ALPHI=446.32  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=1 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.62 AINCHI=1019.78 DELZ=6.844 ALP=448.58 ALPHI=446.61  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=2 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.95 AINCHI=1019.78 DELZ=6.170 ALP=448.59 ALPHI=446.82  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=3 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.09 AINCHI=1019.78 DELZ=6.305 ALP=448.59 ALPHI=446.78  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=4 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1026.79 AINCHI=1019.78 DELZ=7.011 ALP=448.57 ALPHI=446.56  |              |               |                  |              |
| •PARTBN TIME= 84.00 IS=5 ZCALCI 771=1034.78 ZCALCI 761=1019.78 AINCW=1027.65 AINCHI=1019.78 DELZ=7.868 ALP=448.55 ALPHI=446.29  |              |               |                  |              |

\*PARTBN\* TIME= 84.00 IS=6 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCH=1027.87 AINCH=1019.78 DELZ= 8.089 ALP=448.54 ALPHI=446.22  
 \*PARTBN\* TIME= 84.00 IS=7 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCH=1027.83 AINCH=1019.78 DELZ= 8.050 ALP=448.54 ALPHI=445.23  
 \*PARTBN\* TIME= 84.00 IS=8 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCH=1027.56 AINCH=1019.78 DELZ= 7.777 ALP=448.55 ALPHI=446.32

IGNITION TIME, TIME (S)

84.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FIDEL                | 10695628.     | 2404472.7    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10762547.     | 2419516.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 51721.249     | 11627.399    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .94886392+09  | .21331310+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.76551     | 256.76551    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .99805035+09  | .22437065+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6251029     | 1.6251029    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4246.4699     | 9361.8636    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 392748.16     | 865861.48    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | HIF                  | 27.758419     | 61.196830    |
| INERT MASS REMAINING (KG,LBM)              | HIR                  | 1008.2499     | 2222.8105    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 265.51234     | 403794.93    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 65.253191     | 3981994.1    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 112785.90     | 248650.35    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1254.3101     | 2765.2805    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597393     | 1.1597393    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.850224     | 28.329895    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.6538     | 5116.9745    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .93948658-01  | .93948658-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .42896304+09  | 619.25754    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .42657635+11  | 60799.442    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 6.5797507     | 10198.634    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .92974391-02  | .36604092    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .81906404     | 32.246616    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.3307072     | 81204.738    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 53.773125     | 3281437.4    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3400.2892     | 6120.5206    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RAJIAL BURN AREA (M**2,IN**2)              | ABCYL                | 253.93259     | 393596.30    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 63.920519     | 3900669.4    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 224.50607     | 13700201.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .41942376+09  | 608.32275    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .39827247+11  | 57764.539    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .92892708-02  | .36571933    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .92812886-02  | .36540506    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3398.8629     | 6117.9531    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5789965     | 2447.4495    |
| EXPANSION RATIO                            | EPR                  | 6.8071809     | 6.8071809    |
| PRESSURE RATIO                             | PEPO                 | .23097245-01  | .23097245-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| SUMMER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | RBDT   | TAUTD |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE                        | 619.26 | 619.25 | 6120.52 | 11.11  | .003 | 303.02 | 11669.59 | 240.33  | 236.73 | -3.60  | .3658  | 32.247 | .0000  | .000  |
| 15.000                      | 619.25 | 619.24 | 6120.51 | 17.24  | .005 | 383.28 | 11686.17 | 373.63  | 133.41 | .10    | .3658  | 32.207 | .0000  | .000  |
| 30.000                      | 619.23 | 619.20 | 6120.50 | 23.37  | .007 | 383.55 | 11702.82 | 507.03  | 133.50 | .10    | .3658  | 32.202 | .0000  | .000  |
| 45.000                      | 619.24 | 619.21 | 6120.49 | 29.44  | .008 | 383.81 | 11719.44 | 540.52  | 133.59 | .10    | .3658  | 32.198 | .0000  | .000  |
| 60.000                      | 619.23 | 619.19 | 6120.48 | 35.58  | .010 | 384.07 | 11736.04 | 774.09  | 133.68 | .10    | .3658  | 32.193 | .0000  | .000  |
| 75.000                      | 619.22 | 619.17 | 6120.46 | 41.66  | .012 | 384.33 | 11752.61 | 907.76  | 133.77 | .10    | .3658  | 32.188 | .0000  | .000  |
| 90.000                      | 619.20 | 619.14 | 6120.44 | 47.74  | .014 | 384.59 | 11769.15 | 1041.51 | 133.86 | .10    | .3658  | 32.183 | .0000  | .000  |
| 105.000                     | 619.19 | 619.10 | 6120.41 | 53.80  | .015 | 384.85 | 11785.67 | 1175.36 | 133.94 | .10    | .3658  | 32.178 | .0000  | .000  |
| 120.000                     | 619.17 | 619.07 | 6120.39 | 58.54  | .017 | 385.06 | 11798.61 | 1280.36 | 105.08 | .08    | .3658  | 32.173 | .0000  | .000  |
| 135.000                     | 619.17 | 619.07 | 6120.39 | 58.91  | .017 | 340.36 | 11725.18 | 1280.36 | .00    | .00    | .3658  | 32.174 | .0000  | .000  |
| 150.000                     | 619.15 | 619.04 | 6120.36 | 64.49  | .018 | 364.61 | 11737.00 | 1403.00 | 122.71 | .07    | .3658  | 32.174 | .0000  | .000  |
| 165.000                     | 619.14 | 619.00 | 6120.34 | 69.29  | .020 | 384.24 | 11746.61 | 1508.49 | 105.57 | .08    | .3658  | 32.167 | .0000  | .000  |
| 180.000                     | 619.11 | 618.95 | 6120.30 | 75.12  | .021 | 385.17 | 11755.98 | 1642.32 | 133.93 | .10    | .3658  | 32.161 | .0000  | .000  |
| 195.000                     | 619.09 | 618.90 | 6120.27 | 80.93  | .023 | 386.09 | 11845.16 | 1776.47 | 134.25 | .10    | .3658  | 32.155 | .0000  | .000  |
| 210.000                     | 619.06 | 618.84 | 6120.23 | 86.70  | .025 | 387.02 | 11894.13 | 1910.93 | 134.57 | .10    | .3658  | 32.149 | .0000  | .000  |
| 225.000                     | 619.02 | 618.78 | 6120.19 | 92.45  | .026 | 387.95 | 11942.90 | 2045.72 | 134.88 | .10    | .3657  | 32.143 | .0000  | .000  |
| 240.000                     | 618.99 | 618.71 | 6120.15 | 98.16  | .028 | 388.87 | 11991.47 | 2180.82 | 135.20 | .10    | .3657  | 32.137 | .0000  | .000  |
| 255.000                     | 618.95 | 618.64 | 6120.10 | 103.85 | .029 | 389.80 | 12039.84 | 2316.23 | 135.52 | .10    | .3657  | 32.131 | .0000  | .000  |
| 270.000                     | 618.92 | 618.57 | 6120.06 | 109.51 | .031 | 390.72 | 12088.01 | 2451.97 | 135.83 | .10    | .3657  | 32.125 | .0000  | .000  |
| 285.000                     | 618.88 | 618.49 | 6120.01 | 115.14 | .033 | 391.65 | 12135.97 | 2588.02 | 136.15 | .10    | .3657  | 32.118 | .0000  | .000  |
| 300.000                     | 618.83 | 618.41 | 6119.95 | 120.75 | .034 | 392.58 | 12183.74 | 2724.39 | 136.47 | .10    | .3657  | 32.112 | .0000  | .000  |
| 315.000                     | 618.79 | 618.33 | 6119.90 | 126.33 | .036 | 393.53 | 12231.30 | 2861.07 | 136.78 | .10    | .3656  | 32.105 | .0000  | .000  |
| 330.000                     | 618.74 | 618.24 | 6119.84 | 131.89 | .037 | 394.43 | 12278.66 | 2998.07 | 137.10 | .10    | .3656  | 32.099 | .0000  | .000  |
| 345.000                     | 618.69 | 618.15 | 6119.78 | 137.42 | .039 | 395.36 | 12325.81 | 3135.38 | 137.41 | .10    | .3656  | 32.092 | .0000  | .000  |
| 360.000                     | 618.64 | 618.05 | 6119.72 | 142.93 | .040 | 396.28 | 12372.77 | 3273.01 | 137.73 | .10    | .3656  | 32.085 | .0000  | .000  |
| 375.000                     | 618.59 | 617.95 | 6119.66 | 148.41 | .042 | 397.21 | 12419.53 | 3410.96 | 138.04 | .10    | .3656  | 32.078 | .0000  | .000  |
| 390.000                     | 618.53 | 617.85 | 6119.60 | 153.87 | .044 | 398.13 | 12466.68 | 3548.21 | 138.36 | .10    | .3655  | 32.071 | .0000  | .000  |
| 405.000                     | 618.48 | 617.75 | 6119.53 | 159.32 | .045 | 399.06 | 12512.43 | 3687.79 | 138.67 | .10    | .3655  | 32.064 | .0000  | .000  |
| 420.000                     | 618.42 | 617.64 | 6119.46 | 164.74 | .047 | 399.99 | 12558.58 | 3826.67 | 138.99 | .10    | .3655  | 32.057 | .0000  | .000  |
| 435.000                     | 618.40 | 617.60 | 6119.44 | 166.22 | .047 | 400.24 | 12571.25 | 3864.96 | 138.31 | .03    | .3655  | 32.050 | .0000  | .000  |
| 450.000                     | 618.34 | 617.49 | 6119.36 | 172.33 | .049 | 398.38 | 12563.30 | 4003.76 | 138.90 | .10    | .3655  | 32.048 | .0000  | .000  |
| 465.000                     | 618.31 | 617.42 | 6119.31 | 175.99 | .050 | 397.26 | 12558.75 | 4086.75 | 83.05  | .06    | .3654  | 32.041 | .0000  | .000  |
| 480.000                     | 618.28 | 617.69 | 6119.73 | 142.69 | .040 | 49.53  | 15483.46 | 4586.75 | .00    | .00    | .3655  | 32.067 | .0000  | .000  |
| 495.000                     | 618.40 | 617.67 | 6119.52 | 159.98 | .045 | 187.92 | 13950.61 | 4128.23 | 41.30  | .18    | .3655  | 32.067 | .0000  | .000  |
| 510.000                     | 618.58 | 617.60 | 6119.19 | 184.68 | .052 | 326.31 | 12347.15 | 4217.70 | 89.44  | .04    | .3655  | 32.039 | .0000  | .000  |
| 525.000                     | 618.68 | 617.56 | 6118.99 | 197.74 | .056 | 382.99 | 11670.10 | 4268.20 | 50.52  | .03    | .3655  | 31.998 | .0000  | .000  |
| 540.000                     | 618.60 | 617.42 | 6118.93 | 203.32 | .058 | 383.56 | 11706.83 | 4401.42 | 133.32 | .10    | .3655  | 31.977 | .0000  | .000  |
| 555.000                     | 618.53 | 617.27 | 6118.91 | 208.87 | .059 | 384.13 | 11743.43 | 4534.83 | 133.51 | .10    | .3655  | 31.968 | .0000  | .000  |
| 570.000                     | 618.44 | 617.12 | 6118.72 | 214.41 | .061 | 384.71 | 11779.89 | 4668.44 | 133.70 | .10    | .3654  | 31.958 | .0000  | .000  |
| 585.000                     | 618.36 | 616.97 | 6118.63 | 219.93 | .062 | 385.28 | 11816.21 | 4802.23 | 133.89 | .10    | .3654  | 31.949 | .0000  | .000  |
| 600.000                     | 618.28 | 616.81 | 6118.53 | 225.43 | .064 | 385.86 | 11852.40 | 4936.21 | 134.08 | .10    | .3654  | 31.939 | .0000  | .000  |
| 615.000                     | 618.19 | 616.66 | 6118.43 | 230.91 | .065 | 386.43 | 11888.44 | 5070.37 | 134.27 | .10    | .3653  | 31.929 | .0000  | .000  |
| 630.000                     | 618.10 | 616.49 | 6118.33 | 236.37 | .067 | 387.01 | 11924.35 | 5204.73 | 134.45 | .10    | .3653  | 31.920 | .0000  | .000  |
| 645.000                     | 618.01 | 616.33 | 6118.23 | 241.82 | .069 | 387.58 | 11960.13 | 5339.27 | 134.64 | .10    | .3653  | 31.910 | .0000  | .000  |
| 660.000                     | 617.91 | 616.16 | 6118.13 | 247.25 | .070 | 388.16 | 11995.76 | 5474.00 | 134.83 | .10    | .3652  | 31.900 | .0000  | .000  |
| 675.000                     | 617.81 | 615.98 | 6118.02 | 252.66 | .072 | 388.73 | 12031.26 | 5608.92 | 135.01 | .10    | .3652  | 31.890 | .0000  | .000  |



|          |        |        |         |        |      |        |          |         |        |     |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|------|
| 620.204  | 617.72 | 615.80 | 6117.91 | 258.06 | .073 | 389.30 | 12066.62 | 5744.02 | 135.20 | .10 | .3651 | 31.879 | .0000 | .000 |
| 643.204  | 617.61 | 615.62 | 6117.80 | 263.44 | .075 | 389.00 | 12131.85 | 5879.30 | 135.37 | .10 | .3651 | 31.869 | .0000 | .000 |
| 654.204  | 617.51 | 615.44 | 6117.69 | 268.81 | .076 | 390.45 | 12136.94 | 6014.70 | 135.57 | .10 | .3651 | 31.859 | .0000 | .000 |
| 673.204  | 617.41 | 615.25 | 6117.58 | 274.16 | .078 | 391.03 | 12171.99 | 6150.44 | 135.76 | .10 | .3650 | 31.848 | .0000 | .000 |
| 688.204  | 617.30 | 615.06 | 6117.46 | 279.50 | .079 | 391.60 | 12236.70 | 6286.28 | 135.94 | .10 | .3650 | 31.838 | .0000 | .000 |
| 703.204  | 617.19 | 614.86 | 6117.34 | 284.82 | .081 | 392.18 | 12241.37 | 6422.31 | 136.13 | .10 | .3649 | 31.828 | .0000 | .000 |
| 718.204  | 617.08 | 614.67 | 6117.22 | 290.13 | .082 | 392.75 | 12275.91 | 6558.52 | 136.31 | .10 | .3649 | 31.817 | .0000 | .000 |
| 728.191  | 617.02 | 614.56 | 6117.16 | 292.95 | .083 | 393.04 | 12294.24 | 6631.12 | 136.45 | .05 | .3649 | 31.807 | .0000 | .000 |
| 741.191  | 616.87 | 614.35 | 6117.09 | 296.09 | .084 | 395.04 | 12418.89 | 6767.86 | 136.83 | .10 | .3648 | 31.801 | .0000 | .000 |
| 746.336  | 616.81 | 614.28 | 6117.06 | 297.16 | .084 | 395.72 | 12461.31 | 6814.91 | 137.09 | .03 | .3648 | 31.796 | .0000 | .000 |
| 746.346  | 616.74 | 614.19 | 6116.99 | 246.74 | .070 | 154.47 | 14993.23 | 6814.91 | .00    | .00 | .3649 | 31.844 | .0000 | .000 |
| 761.346  | 616.92 | 614.93 | 6117.80 | 263.56 | .075 | 228.50 | 14174.61 | 6881.54 | 66.51  | .11 | .3649 | 31.845 | .0000 | .000 |
| 776.346  | 617.12 | 614.82 | 6117.37 | 283.55 | .080 | 302.53 | 13353.05 | 6973.79 | 92.22  | .04 | .3649 | 31.820 | .0000 | .000 |
| 791.346  | 617.37 | 614.66 | 6116.82 | 307.37 | .087 | 376.56 | 12528.54 | 7091.67 | 117.92 | .04 | .3649 | 31.791 | .0000 | .000 |
| 794.631  | 617.43 | 614.61 | 6116.67 | 313.54 | .089 | 393.76 | 12336.56 | 7122.73 | 31.08  | .02 | .3649 | 31.755 | .0000 | .000 |
| 804.631  | 617.33 | 614.40 | 6116.56 | 318.06 | .090 | 394.73 | 12398.86 | 7259.53 | 136.90 | .10 | .3649 | 31.749 | .0000 | .000 |
| 824.631  | 617.16 | 614.17 | 6116.44 | 322.57 | .091 | 395.70 | 12460.73 | 7376.66 | 137.23 | .10 | .3648 | 31.740 | .0000 | .000 |
| 834.631  | 617.02 | 613.95 | 6116.33 | 327.07 | .093 | 396.67 | 12522.16 | 7534.12 | 137.55 | .10 | .3648 | 31.730 | .0000 | .000 |
| 854.631  | 616.87 | 613.73 | 6116.21 | 331.53 | .094 | 397.64 | 12582.95 | 7671.43 | 137.41 | .09 | .3647 | 31.720 | .0000 | .000 |
| 864.701  | 616.59 | 613.50 | 6116.29 | 328.75 | .093 | 402.62 | 12923.93 | 7810.13 | 138.77 | .07 | .3646 | 31.711 | .0000 | .000 |
| 884.781  | 616.32 | 613.27 | 6116.34 | 326.46 | .093 | 406.49 | 13253.40 | 7950.38 | 140.28 | .04 | .3646 | 31.717 | .0000 | .000 |
| 894.781  | 616.07 | 613.05 | 6116.39 | 324.61 | .092 | 410.95 | 13571.36 | 8092.18 | 141.80 | .00 | .3645 | 31.721 | .0000 | .000 |
| 914.781  | 615.83 | 612.84 | 6116.43 | 323.18 | .092 | 415.41 | 13877.82 | 8235.54 | 143.32 | .04 | .3644 | 31.724 | .0000 | .000 |
| 929.781  | 615.59 | 612.63 | 6116.45 | 322.14 | .091 | 419.85 | 14172.76 | 8380.44 | 144.83 | .07 | .3643 | 31.725 | .0000 | .000 |
| 944.781  | 615.37 | 612.42 | 6116.47 | 321.45 | .091 | 424.29 | 14456.20 | 8526.89 | 146.35 | .11 | .3643 | 31.726 | .0000 | .000 |
| 959.781  | 615.16 | 612.21 | 6116.48 | 321.10 | .091 | 428.73 | 14720.12 | 8674.92 | 147.89 | .14 | .3643 | 31.727 | .0000 | .000 |
| 974.781  | 614.95 | 612.01 | 6116.48 | 321.07 | .091 | 433.16 | 14988.54 | 8824.57 | 149.48 | .17 | .3645 | 31.727 | .0000 | .000 |
| 989.781  | 614.75 | 611.80 | 6116.47 | 321.35 | .091 | 437.60 | 15237.44 | 8975.91 | 151.14 | .20 | .3649 | 31.727 | .0000 | .000 |
| 1004.781 | 614.56 | 611.60 | 6116.46 | 321.93 | .091 | 442.03 | 15474.84 | 9129.02 | 152.88 | .23 | .3655 | 31.727 | .0000 | .000 |
| 1019.781 | 614.37 | 611.40 | 6116.44 | 322.79 | .091 | 446.48 | 15700.73 | 9284.00 | 154.72 | .25 | .3663 | 31.728 | .0000 | .000 |
| 1034.781 | 614.28 | 611.30 | 6116.43 | 323.31 | .092 | 448.57 | 15906.95 | 9359.94 | 75.57  | .37 | .3668 | 31.332 | .0000 | .000 |
| 1049.791 | 614.21 | 611.20 | 6116.52 | 319.44 | .091 | .00    | 15997.77 | 9360.11 | .00    | .16 | .3668 | 31.024 | .0000 | .000 |
| 1065.791 | 614.22 | 611.10 | 6116.51 | 320.21 | .091 | .00    | 15969.84 | 9360.40 | .00    | .30 | .3668 | 30.483 | .0000 | .000 |
| 1070.791 | 614.23 | 611.10 | 6116.49 | 320.58 | .091 | .00    | 15941.80 | 9360.70 | .00    | .30 | .3668 | 29.942 | .0000 | .000 |
| 1084.791 | 614.24 | 611.10 | 6116.48 | 321.10 | .091 | .00    | 15916.69 | 9360.96 | .00    | .26 | .3668 | 29.459 | .0000 | .000 |
| AFT(A)   | 608.32 | 581.23 | 6080.38 | 987.86 | .281 | .0000  | 15623.73 | 9361.86 | .00    | .55 | .3657 | 29.460 | .0000 | .000 |
| AFT(B)   | 608.31 | 608.31 | 6117.95 | -0.02  | .000 | .0000  | 16413.12 | .35     | .00    | .35 | .3654 | 20.670 | .0000 | .000 |



| SLUT<br>INTERFACE<br>LOCATION<br>IN. | PO | P | T | U | AP | DRDOT | AB | R8 | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|--------------------------------------|----|---|---|---|----|-------|----|----|---------------------|-----------------|
|--------------------------------------|----|---|---|---|----|-------|----|----|---------------------|-----------------|

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 1.1676*02 | 6.1917*02 | 6.1967*02 | 6.1204*03 | 4.1962*01 | 1.6460*04 | 0.0000 | 0.0000 | 0.0000 | 1.2804*03 |
| AFT     | 1.1677*02 | 6.1917*02 | 6.1967*02 | 6.1204*03 | 4.1962*01 | 1.6460*04 | 0.0000 | 0.0000 | 0.0000 | 1.2804*03 |

GAS BUILDUP IN SLOT, DW/DI = -2.0994-04

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 4.2705*02 | 6.1831*02 | 6.1742*02 | 6.1193*03 | 1.3491*02 | 1.6303*04 | 0.0000 | 0.0000 | 0.0000 | 4.0867*03 |
| AFT     | 4.2706*02 | 6.1858*02 | 6.1769*02 | 6.1197*03 | 1.3486*02 | 1.6303*04 | 0.0000 | 0.0000 | 0.0000 | 4.0867*03 |

GAS BUILDUP IN SLOT, DW/DI = -2.0846-04

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 7.4634*02 | 6.1681*02 | 6.1428*02 | 6.1171*03 | 2.2603*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 6.0149*03 |
| AFT     | 7.4635*02 | 6.1753*02 | 6.1499*02 | 6.1181*03 | 2.2581*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 6.0149*03 |

GAS BUILDUP IN SLOT, DW/DI = -2.0786-04

|          |      |       |      |       |             |       |             |               |               |       |       |            |              |
|----------|------|-------|------|-------|-------------|-------|-------------|---------------|---------------|-------|-------|------------|--------------|
| PARITION | TIME | 84.50 | 15=1 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1023.06 | AINCW=1019.78 | DELZ= | 3.274 | ALP=448.67 | ALPHI=447.76 |
| PARITION | TIME | 84.50 | 15=2 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1022.38 | AINCW=1019.78 | DELZ= | 2.595 | ALP=448.69 | ALPHI=447.98 |
| PARITION | TIME | 84.50 | 15=3 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1022.51 | AINCW=1019.78 | DELZ= | 2.730 | ALP=448.69 | ALPHI=447.94 |
| PARITION | TIME | 84.50 | 15=4 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1023.22 | AINCW=1019.78 | DELZ= | 3.443 | ALP=448.67 | ALPHI=447.71 |
| PARITION | TIME | 84.50 | 15=5 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.09 | AINCW=1019.78 | DELZ= | 4.309 | ALP=448.64 | ALPHI=447.43 |
| PARITION | TIME | 84.50 | 15=6 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.31 | AINCW=1019.78 | DELZ= | 4.532 | ALP=448.64 | ALPHI=447.36 |
| PARITION | TIME | 84.50 | 15=7 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.27 | AINCW=1019.78 | DELZ= | 4.491 | ALP=448.64 | ALPHI=447.37 |
| PARITION | TIME | 84.50 | 15=8 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.00 | AINCW=1019.78 | DELZ= | 4.216 | ALP=448.65 | ALPHI=447.46 |
| PARITION | TIME | 84.50 | 15=1 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1023.06 | AINCW=1019.78 | DELZ= | 3.274 | ALP=448.67 | ALPHI=447.76 |
| PARITION | TIME | 84.50 | 15=2 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1022.38 | AINCW=1019.78 | DELZ= | 2.595 | ALP=448.69 | ALPHI=447.98 |
| PARITION | TIME | 84.50 | 15=3 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1022.51 | AINCW=1019.78 | DELZ= | 2.730 | ALP=448.69 | ALPHI=447.94 |
| PARITION | TIME | 84.50 | 15=4 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1023.22 | AINCW=1019.78 | DELZ= | 3.443 | ALP=448.67 | ALPHI=447.71 |
| PARITION | TIME | 84.50 | 15=5 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.09 | AINCW=1019.78 | DELZ= | 4.309 | ALP=448.64 | ALPHI=447.43 |
| PARITION | TIME | 84.50 | 15=6 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.31 | AINCW=1019.78 | DELZ= | 4.532 | ALP=448.64 | ALPHI=447.36 |
| PARITION | TIME | 84.50 | 15=7 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.27 | AINCW=1019.78 | DELZ= | 4.491 | ALP=448.64 | ALPHI=447.37 |
| PARITION | TIME | 84.50 | 15=8 | ZCALC | 771=1034.78 | ZCALC | 761=1019.78 | AINCW=1024.00 | AINCW=1019.78 | DELZ= | 4.216 | ALP=448.65 | ALPHI=447.46 |

TIME = 84.50

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|          |      |       |      |       |             |       |             |               |               |             |            |              |              |
|----------|------|-------|------|-------|-------------|-------|-------------|---------------|---------------|-------------|------------|--------------|--------------|
| PARITION | TIME | 85.00 | 15=1 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1019.50 | AINCW=1004.78 | DELZ=14.718 | ALP=448.77 | ALPHI=444.46 |              |
| PARITION | TIME | 85.00 | 15=2 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1018.82 | AINCW=1004.78 | DELZ=14.037 | ALP=448.78 | ALPHI=444.67 |              |
| PARITION | TIME | 85.00 | 15=3 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1018.95 | AINCW=1004.78 | DELZ=14.172 | ALP=448.78 | ALPHI=444.63 |              |
| PARITION | TIME | 85.00 | 15=4 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1019.67 | AINCW=1004.78 | DELZ=14.887 | ALP=448.76 | ALPHI=444.41 |              |
| PARITION | TIME | 85.00 | 15=5 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1020.53 | AINCW=1019.78 | DELZ=       | 7.53       | ALP=448.74   | ALPHI=448.58 |
| PARITION | TIME | 85.00 | 15=6 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1020.76 | AINCW=1019.78 | DELZ=       | 9.79       | ALP=448.73   | ALPHI=448.50 |
| PARITION | TIME | 85.00 | 15=7 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1020.72 | AINCW=1019.78 | DELZ=       | 9.36       | ALP=448.73   | ALPHI=448.52 |
| PARITION | TIME | 85.00 | 15=8 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1020.44 | AINCW=1019.78 | DELZ=       | 6.59       | ALP=448.74   | ALPHI=448.61 |
| PARITION | TIME | 85.00 | 15=1 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1019.50 | AINCW=1004.78 | DELZ=14.718 | ALP=448.77 | ALPHI=444.46 |              |
| PARITION | TIME | 85.00 | 15=2 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1018.82 | AINCW=1004.78 | DELZ=14.037 | ALP=448.78 | ALPHI=444.67 |              |
| PARITION | TIME | 85.00 | 15=3 | ZCALC | 761=1019.78 | ZCALC | 751=1004.78 | AINCW=1018.95 | AINCW=1004.78 | DELZ=14.172 | ALP=448.78 | ALPHI=444.63 |              |

\*PARTBN\* TIME= 85.00 IS=4 ZCALC( 76)=1019.78 ZCALC( 75)=1004.78 AINCW=1019.67 AINCHI=1004.78 DELZ=14.887 ALP=448.76 ALPHI=444.41  
\*PARTBN\* TIME= 85.00 IS=5 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1020.53 AINCHI=1019.78 DELZ= .753 ALP=448.74 ALPHI=448.58  
\*PARTBN\* TIME= 85.00 IS=6 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1020.76 AINCHI=1019.78 DELZ= .979 ALP=448.73 ALPHI=448.50  
\*PARTBN\* TIME= 85.00 IS=7 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1020.72 AINCHI=1019.78 DELZ= .936 ALP=448.73 ALPHI=448.52  
\*PARTBN\* TIME= 85.00 IS=8 ZCALC( 77)=1034.78 ZCALC( 76)=1019.78 AINCW=1020.44 AINCHI=1019.78 DELZ= .659 ALP=448.74 ALPHI=448.61

IGNITION TIME, TIME (S)

05.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10621226.     | 2387746.7    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 17684033.     | 2401866.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 52538.791     | 11004.446    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT1               | .95952222+09  | .21570918+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.72803     | 256.72803    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT1               | .10087735+10  | .22678131+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6252037     | 1.6252037    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 1215.4855     | 9293.5548    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 396979.08     | 875189.07    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 20.181087     | 62.128662    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 980.17503     | 2160.9160    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 259.35668     | 402003.66    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 63.061448     | 3848245.6    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 108555.81     | 239324.59    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1254.0829     | 2764.7795    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597343     | 1.1597343    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.849302     | 28.327862    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.5080     | 5116.7585    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .93640125-01  | .93640125-01 |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .42354256+09  | 614.29655    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHUT                | .42482882+11  | 61616.211    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 6.4240583     | 9957.3103    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .92712262-02  | .36500891    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .82835487     | 32.612397    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 1.2703033     | 77523.545    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 53.833449     | 3285118.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3399.6418     | 6119.3552    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 252.93262     | 392046.35    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 61.789098     | 3770602.1    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 226.73598     | 13836279.    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .41611411+09  | 603.52250    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDY               | .40245010+11  | 58370.453    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(N1+1,1)          | .92635603-02  | .36470710    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1+2,1)          | .92555913-02  | .36439336    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1+1,1)         | .74820400     | 29.460300    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(N1+2,3)         | 3398.2362     | 6116.8251    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5798468     | 2448.7675    |
| EXPANSION RATIO                            | EPR                  | 6.8035171     | 6.8035171    |
| PRESSURE RATIO                             | PEPO                 | .23113869-01  | .23113869-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FURE                        | 614.30 | 614.29 | 6119.36 | 10.77  | .003 | 385.31 | 11809.94 | 233.95  | 230.48 | -3.47  | .3648  | 32.612 | .6000  | .000  |
| 15.000                      | 614.29 | 614.28 | 6119.35 | 16.90  | .005 | 385.57 | 11826.71 | 367.67  | 133.82 | .11    | .3648  | 32.572 | .0000  | .000  |
| 30.000                      | 614.29 | 614.27 | 6119.34 | 23.02  | .007 | 385.83 | 11843.45 | 501.48  | 133.91 | .11    | .3648  | 32.568 | .0000  | .000  |
| 45.000                      | 614.28 | 614.25 | 6119.33 | 29.12  | .008 | 386.10 | 11860.17 | 635.38  | 134.01 | .11    | .3648  | 32.563 | .0000  | .000  |
| 60.000                      | 614.27 | 614.23 | 6119.31 | 35.22  | .010 | 386.36 | 11876.86 | 769.37  | 134.10 | .10    | .3648  | 32.559 | .0000  | .000  |
| 75.000                      | 614.26 | 614.21 | 6119.29 | 41.30  | .012 | 386.62 | 11893.52 | 903.45  | 134.18 | .10    | .3648  | 32.554 | .0000  | .000  |
| 90.000                      | 614.24 | 614.18 | 6119.27 | 47.37  | .013 | 386.88 | 11910.16 | 1037.62 | 134.27 | .10    | .3648  | 32.549 | .0000  | .000  |
| 105.000                     | 614.23 | 614.15 | 6119.25 | 53.42  | .015 | 387.15 | 11926.78 | 1171.87 | 134.36 | .10    | .3648  | 32.544 | .0000  | .000  |
| 116.761                     | 614.21 | 614.12 | 6119.23 | 58.17  | .016 | 387.35 | 11939.78 | 1277.20 | 105.41 | .08    | .3648  | 32.538 | .0000  | .000  |
| 116.771                     | 614.21 | 614.12 | 6119.22 | 58.61  | .017 | 341.33 | 11849.77 | 1277.20 | .00    | .00    | .3648  | 32.539 | .0000  | .000  |
| 131.771                     | 614.20 | 614.08 | 6119.20 | 64.13  | .018 | 366.30 | 11870.57 | 1399.96 | 122.83 | .08    | .3648  | 32.540 | .0000  | .000  |
| 143.919                     | 614.18 | 614.04 | 6119.17 | 68.88  | .020 | 386.53 | 11887.48 | 1505.71 | 105.83 | .08    | .3648  | 32.532 | .0000  | .000  |
| 154.919                     | 614.15 | 613.99 | 6119.14 | 74.72  | .021 | 387.45 | 11937.21 | 1639.95 | 134.34 | .10    | .3647  | 32.526 | .0000  | .000  |
| 173.919                     | 614.13 | 613.94 | 6119.11 | 80.52  | .023 | 388.38 | 11986.74 | 1774.50 | 134.66 | .10    | .3647  | 32.521 | .0000  | .000  |
| 184.919                     | 614.10 | 613.89 | 6119.07 | 86.29  | .024 | 389.31 | 12036.07 | 1909.38 | 134.98 | .10    | .3647  | 32.515 | .0000  | .000  |
| 203.919                     | 614.07 | 613.83 | 6119.03 | 92.03  | .026 | 390.23 | 12085.19 | 2044.57 | 135.30 | .10    | .3647  | 32.509 | .0000  | .000  |
| 218.919                     | 614.03 | 613.76 | 6118.98 | 97.75  | .028 | 391.16 | 12134.11 | 2180.08 | 135.61 | .10    | .3647  | 32.503 | .0000  | .000  |
| 233.919                     | 614.00 | 613.69 | 6118.94 | 103.43 | .029 | 392.09 | 12182.82 | 2315.90 | 135.93 | .10    | .3647  | 32.496 | .0000  | .000  |
| 248.919                     | 613.96 | 613.62 | 6118.89 | 109.09 | .031 | 393.01 | 12231.33 | 2452.05 | 136.25 | .10    | .3647  | 32.490 | .0000  | .000  |
| 263.919                     | 613.92 | 613.55 | 6118.84 | 114.72 | .032 | 393.94 | 12279.63 | 2588.50 | 136.56 | .10    | .3647  | 32.484 | .0000  | .000  |
| 278.919                     | 613.88 | 613.47 | 6118.79 | 120.33 | .034 | 394.87 | 12327.72 | 2725.28 | 136.88 | .10    | .3646  | 32.477 | .0000  | .000  |
| 293.919                     | 613.83 | 613.40 | 6118.74 | 125.91 | .036 | 395.79 | 12375.61 | 2862.37 | 137.19 | .10    | .3646  | 32.471 | .0000  | .000  |
| 308.919                     | 613.79 | 613.30 | 6118.68 | 131.46 | .037 | 396.72 | 12423.29 | 2999.77 | 137.51 | .10    | .3646  | 32.464 | .0000  | .000  |
| 323.919                     | 613.74 | 613.20 | 6118.62 | 136.99 | .039 | 397.65 | 12470.77 | 3137.49 | 137.82 | .10    | .3646  | 32.457 | .0000  | .000  |
| 338.919                     | 613.69 | 613.11 | 6118.56 | 142.50 | .040 | 398.58 | 12518.05 | 3275.52 | 138.14 | .10    | .3646  | 32.450 | .0000  | .000  |
| 353.919                     | 613.64 | 613.01 | 6118.50 | 147.98 | .042 | 399.50 | 12565.12 | 3413.87 | 138.45 | .10    | .3645  | 32.444 | .0000  | .000  |
| 368.919                     | 613.58 | 612.91 | 6118.44 | 153.45 | .043 | 400.43 | 12611.98 | 3552.53 | 138.76 | .10    | .3645  | 32.436 | .0000  | .000  |
| 383.919                     | 613.52 | 612.80 | 6118.37 | 158.89 | .045 | 401.36 | 12658.64 | 3691.50 | 139.08 | .10    | .3645  | 32.429 | .0000  | .000  |
| 398.919                     | 613.47 | 612.70 | 6118.30 | 164.31 | .047 | 402.28 | 12705.59 | 3830.79 | 139.39 | .10    | .3645  | 32.422 | .0000  | .000  |
| 413.048                     | 613.45 | 612.66 | 6118.28 | 165.79 | .047 | 402.54 | 12717.84 | 3869.18 | 38.42  | .03    | .3644  | 32.415 | .0000  | .000  |
| 418.048                     | 613.39 | 612.55 | 6118.20 | 171.91 | .049 | 403.67 | 12769.21 | 4008.38 | 139.30 | .10    | .3644  | 32.413 | .0000  | .000  |
| 427.051                     | 613.36 | 612.48 | 6118.15 | 175.56 | .050 | 399.56 | 12704.24 | 4091.61 | 83.29  | .06    | .3644  | 32.407 | .0000  | .000  |
| 427.061                     | 613.33 | 612.74 | 6118.55 | 143.86 | .041 | 333.24 | 15498.58 | 4091.61 | .00    | .00    | .3645  | 32.432 | .0000  | .000  |
| 442.061                     | 613.46 | 612.72 | 6118.35 | 160.51 | .045 | 179.34 | 14016.06 | 4128.66 | 36.87  | .18    | .3645  | 32.432 | .0000  | .000  |
| 457.061                     | 613.63 | 612.66 | 6118.03 | 184.32 | .052 | 325.44 | 12465.23 | 4216.25 | 87.55  | .03    | .3645  | 32.404 | .0000  | .000  |
| 463.204                     | 613.72 | 612.61 | 6117.84 | 196.88 | .056 | 385.27 | 11810.39 | 4266.70 | 50.48  | .03    | .3645  | 32.363 | .0000  | .000  |
| 478.204                     | 613.64 | 612.47 | 6117.75 | 202.45 | .057 | 385.84 | 11847.35 | 4400.33 | 133.74 | .10    | .3645  | 32.343 | .0000  | .000  |
| 493.204                     | 613.56 | 612.33 | 6117.66 | 208.01 | .059 | 386.42 | 11884.15 | 4534.16 | 133.93 | .10    | .3644  | 32.333 | .0000  | .000  |
| 508.204                     | 613.40 | 612.18 | 6117.57 | 213.55 | .061 | 386.99 | 11920.83 | 4668.17 | 134.12 | .10    | .3644  | 32.324 | .0000  | .000  |
| 523.204                     | 613.40 | 612.03 | 6117.48 | 219.07 | .062 | 387.57 | 11957.37 | 4822.37 | 134.31 | .10    | .3644  | 32.314 | .0000  | .000  |
| 538.204                     | 613.32 | 611.88 | 6117.38 | 224.57 | .064 | 388.14 | 11993.76 | 4936.76 | 134.48 | .10    | .3643  | 32.304 | .0000  | .000  |
| 553.204                     | 613.23 | 611.72 | 6117.28 | 230.05 | .065 | 388.72 | 12030.31 | 5071.34 | 134.68 | .10    | .3643  | 32.295 | .0000  | .000  |
| 568.204                     | 613.14 | 611.56 | 6117.18 | 235.51 | .067 | 389.29 | 12066.13 | 5206.11 | 134.87 | .10    | .3643  | 32.285 | .0000  | .000  |
| 583.204                     | 613.05 | 611.40 | 6117.08 | 240.96 | .068 | 389.87 | 12102.10 | 5341.06 | 135.05 | .10    | .3642  | 32.275 | .0000  | .000  |
| 598.204                     | 612.96 | 611.23 | 6116.98 | 246.39 | .070 | 389.44 | 12137.93 | 5476.20 | 135.24 | .10    | .3642  | 32.265 | .0000  | .000  |
| 613.204                     | 612.86 | 611.06 | 6116.87 | 251.81 | .071 | 391.02 | 12173.62 | 5611.52 | 135.43 | .10    | .3642  | 32.255 | .0000  | .000  |

|          |        |        |         |        |     |        |          |         |        |     |      |        |      |      |
|----------|--------|--------|---------|--------|-----|--------|----------|---------|--------|-----|------|--------|------|------|
| 628-204  | 612-76 | 610-88 | 6116-76 | 257-21 | 073 | 391-59 | 12209-18 | 5747-03 | 135-61 | 010 | 3641 | 32-244 | 0000 | 0000 |
| 643-204  | 612-66 | 610-76 | 6116-66 | 262-59 | 074 | 392-17 | 12244-59 | 5882-73 | 135-80 | 010 | 3641 | 32-234 | 0000 | 0000 |
| 655-204  | 612-56 | 610-52 | 6116-54 | 267-96 | 076 | 392-74 | 12277-86 | 6018-61 | 135-98 | 010 | 3640 | 32-224 | 0000 | 0000 |
| 673-204  | 612-46 | 610-33 | 6116-43 | 273-31 | 077 | 393-32 | 12314-99 | 6154-67 | 136-17 | 010 | 3640 | 32-213 | 0000 | 0000 |
| 688-204  | 612-35 | 610-14 | 6116-31 | 278-65 | 079 | 393-89 | 12349-98 | 6290-92 | 136-35 | 010 | 3640 | 32-203 | 0000 | 0000 |
| 703-204  | 612-25 | 609-95 | 6116-20 | 283-98 | 080 | 394-47 | 12384-44 | 6427-36 | 136-54 | 010 | 3639 | 32-193 | 0000 | 0000 |
| 718-204  | 612-14 | 609-76 | 6116-08 | 289-29 | 082 | 395-04 | 12419-55 | 6563-98 | 136-72 | 010 | 3639 | 32-182 | 0000 | 0000 |
| 726-191  | 612-08 | 609-65 | 6116-01 | 292-12 | 083 | 395-35 | 12437-97 | 6636-80 | 72-87  | 005 | 3638 | 32-172 | 0000 | 0000 |
| 741-191  | 611-93 | 609-45 | 6115-94 | 295-27 | 084 | 397-33 | 12563-33 | 6773-93 | 137-24 | 010 | 3638 | 32-166 | 0000 | 0000 |
| 748-336  | 611-87 | 609-28 | 6115-91 | 296-35 | 084 | 398-01 | 12605-98 | 6821-13 | 47-23  | 003 | 3638 | 32-160 | 0000 | 0000 |
| 748-346  | 611-81 | 610-04 | 6116-94 | 248-04 | 070 | 142-58 | 15047-34 | 6421-13 | 000    | 000 | 3639 | 32-209 | 0000 | 0000 |
| 761-346  | 611-98 | 609-99 | 6116-62 | 264-23 | 075 | 221-00 | 14256-41 | 6804-20 | 62-96  | 012 | 3639 | 32-210 | 0000 | 0000 |
| 776-346  | 612-17 | 609-89 | 6116-21 | 283-51 | 080 | 299-41 | 13462-64 | 6974-36 | 90-12  | 004 | 3639 | 32-185 | 0000 | 0000 |
| 794-346  | 612-40 | 609-73 | 6115-68 | 306-45 | 087 | 377-83 | 12666-03 | 7091-59 | 117-27 | 004 | 3639 | 32-155 | 0000 | 0000 |
| 799-831  | 612-46 | 609-69 | 6115-53 | 312-39 | 089 | 396-05 | 12480-55 | 7122-70 | 31-13  | 002 | 3638 | 32-119 | 0000 | 0000 |
| 807-831  | 612-33 | 609-47 | 6115-42 | 316-92 | 090 | 397-02 | 12543-20 | 7259-90 | 137-31 | 010 | 3638 | 32-114 | 0000 | 0000 |
| 825-831  | 612-19 | 609-25 | 6115-31 | 321-44 | 091 | 397-99 | 12605-41 | 7397-44 | 137-63 | 010 | 3638 | 32-104 | 0000 | 0000 |
| 837-831  | 612-05 | 609-03 | 6115-19 | 325-95 | 092 | 398-96 | 12667-17 | 7535-29 | 137-95 | 010 | 3637 | 32-095 | 0000 | 0000 |
| 854-781  | 611-91 | 608-81 | 6115-08 | 330-43 | 094 | 399-93 | 12728-29 | 7673-00 | 137-81 | 010 | 3637 | 32-085 | 0000 | 0000 |
| 867-781  | 611-64 | 608-58 | 6115-14 | 320-12 | 093 | 404-31 | 13055-01 | 7812-10 | 139-17 | 008 | 3636 | 32-075 | 0000 | 0000 |
| 884-781  | 611-38 | 608-36 | 6115-18 | 326-26 | 092 | 408-78 | 13376-68 | 7952-73 | 140-68 | 004 | 3635 | 32-081 | 0000 | 0000 |
| 894-781  | 611-14 | 608-14 | 6115-22 | 324-82 | 092 | 413-24 | 13675-77 | 8094-92 | 142-19 | 000 | 3634 | 32-085 | 0000 | 0000 |
| 914-781  | 610-90 | 607-93 | 6115-25 | 323-75 | 092 | 417-70 | 13968-81 | 8238-65 | 143-70 | 003 | 3634 | 32-088 | 0000 | 0000 |
| 929-781  | 610-68 | 607-72 | 6115-27 | 323-05 | 092 | 422-14 | 14251-77 | 8383-92 | 145-21 | 006 | 3633 | 32-089 | 0000 | 0000 |
| 944-781  | 610-46 | 607-51 | 6115-28 | 322-67 | 091 | 426-58 | 14521-68 | 8530-75 | 146-74 | 010 | 3633 | 32-090 | 0000 | 0000 |
| 954-781  | 610-25 | 607-30 | 6115-28 | 322-62 | 091 | 431-02 | 14783-01 | 8679-18 | 148-30 | 013 | 3634 | 32-091 | 0000 | 0000 |
| 974-781  | 610-05 | 607-10 | 6115-27 | 322-86 | 091 | 435-45 | 15032-29 | 8829-25 | 149-91 | 016 | 3637 | 32-091 | 0000 | 0000 |
| 989-781  | 609-85 | 606-89 | 6115-26 | 323-40 | 092 | 439-89 | 15270-50 | 8981-03 | 151-59 | 019 | 3641 | 32-091 | 0000 | 0000 |
| 1004-781 | 609-66 | 606-69 | 6115-24 | 324-21 | 092 | 444-33 | 15497-64 | 9134-63 | 153-38 | 022 | 3649 | 32-092 | 0000 | 0000 |
| 1014-781 | 609-48 | 606-49 | 6115-21 | 325-28 | 092 | 448-66 | 15709-93 | 9287-28 | 152-40 | 024 | 3658 | 32-080 | 0000 | 0000 |
| 1034-781 | 609-44 | 606-48 | 6115-26 | 323-15 | 092 | 224-37 | 15821-53 | 9291-80 | 4-31   | 022 | 3658 | 31-332 | 0000 | 0000 |
| 1046-791 | 609-37 | 606-40 | 6115-35 | 319-60 | 091 | 000    | 15997-77 | 9291-86 | 000    | 006 | 3658 | 31-024 | 0000 | 0000 |
| 1055-791 | 609-38 | 606-48 | 6115-34 | 320-17 | 091 | 000    | 15969-84 | 9292-15 | 000    | 029 | 3658 | 30-483 | 0000 | 0000 |
| 1070-791 | 609-39 | 606-48 | 6115-32 | 320-74 | 091 | 000    | 15941-80 | 9292-43 | 000    | 029 | 3658 | 29-942 | 0000 | 0000 |
| 1084-171 | 609-40 | 606-48 | 6115-31 | 321-25 | 091 | 000    | 15916-69 | 9292-69 | 000    | 025 | 3658 | 29-459 | 0000 | 0000 |
| AFT (A)  | 603-52 | 576-61 | 6079-21 | 988-38 | 081 | 0000   | 15823-73 | 9293-55 | 000    | 053 | 3647 | 29-460 | 0000 | 0000 |
| AFT (B)  | 603-51 | 603-51 | 6116-83 | -02    | 000 | 0000   | 10413-12 | 034     | 000    | 034 | 3644 | 20-670 | 0000 | 0000 |

|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO        | P         | T         | U         | AP        | DWDOT  | AB      | RB     | DELTA       | WSLOT     |
|---------|--------------------------------------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|-------------|-----------|
|         |                                      | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | TAU.<br>IN. | LB/SEC    |
| FORWARD | 1.1676+02                            | 6.1421+02 | 6.1412+02 | 6.1192+03 | 4.2192+01 | 1.6469+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000      | 1.2772+03 |
| AFT     | 1.1677+02                            | 6.1421+02 | 6.1412+02 | 6.1192+03 | 4.2192+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000      | 1.2772+03 |

GAS BUILDUP IN SLOT, DW/DI = -2.0234-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 6.1336+02 | 6.1248+02 | 6.1182+03 | 1.3614+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.0916+03 |
| AFT     | 4.2706+02 | 6.1362+02 | 6.1274+02 | 6.1185+03 | 1.3609+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.0916+03 |

GAS BUILDUP IN SLOT, DW/DI = -2.0092-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 6.1187+02 | 6.0938+02 | 6.1159+03 | 2.2803+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8211+03 |
| AFT     | 7.4635+02 | 6.1256+02 | 6.1006+02 | 6.1169+03 | 2.2782+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8211+03 |

GAS BUILDUP IN SLOT, DW/DI = -2.0042-04

| WEB BURNOUT INCREMENT LOCATION | SECTOR NO. | TAU     | TAUWDP  | TIME  |
|--------------------------------|------------|---------|---------|-------|
| 1019.7810                      | 5          | 32.1014 | 32.1014 | 85.00 |
| 1019.7810                      | 6          | 32.1014 | 32.1014 | 85.00 |
| 1019.7810                      | 7          | 32.1014 | 32.1014 | 85.00 |
| 1019.7810                      | 8          | 32.1014 | 32.1014 | 85.00 |

| TIME  | IS   | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.95 | AINCHI | 1004.78 | DELZ | 11.167 | ALP | 448.86 | ALPHI | 445.61 |
|-------|------|-------|----|---------|-------|----|---------|-------|---------|--------|---------|------|--------|-----|--------|-------|--------|
| 85.50 | 15=1 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.95 | AINCHI | 1004.78 | DELZ | 11.167 | ALP | 448.86 | ALPHI | 445.61 |
| 85.50 | 15=2 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.26 | AINCHI | 1004.78 | DELZ | 10.482 | ALP | 448.88 | ALPHI | 445.82 |
| 85.50 | 15=3 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.40 | AINCHI | 1004.78 | DELZ | 10.618 | ALP | 448.87 | ALPHI | 445.78 |
| 85.50 | 15=4 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1016.12 | AINCHI | 1004.78 | DELZ | 11.337 | ALP | 448.86 | ALPHI | 445.56 |
| 85.50 | 15=5 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1016.99 | AINCHI | 1004.78 | DELZ | 12.207 | ALP | 448.83 | ALPHI | 445.29 |
| 85.50 | 15=6 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1017.22 | AINCHI | 1004.78 | DELZ | 12.435 | ALP | 448.83 | ALPHI | 445.21 |
| 85.50 | 15=7 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1017.17 | AINCHI | 1004.78 | DELZ | 12.392 | ALP | 448.83 | ALPHI | 445.23 |
| 85.50 | 15=8 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1016.89 | AINCHI | 1004.78 | DELZ | 12.113 | ALP | 448.83 | ALPHI | 445.31 |
| 85.50 | 15=1 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.95 | AINCHI | 1004.78 | DELZ | 11.167 | ALP | 448.86 | ALPHI | 445.61 |
| 85.50 | 15=2 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.26 | AINCHI | 1004.78 | DELZ | 10.482 | ALP | 448.88 | ALPHI | 445.82 |
| 85.50 | 15=3 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1015.40 | AINCHI | 1004.78 | DELZ | 10.618 | ALP | 448.87 | ALPHI | 445.78 |
| 85.50 | 15=4 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1016.12 | AINCHI | 1004.78 | DELZ | 11.337 | ALP | 448.86 | ALPHI | 445.56 |
| 85.50 | 15=5 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1016.99 | AINCHI | 1004.78 | DELZ | 12.207 | ALP | 448.83 | ALPHI | 445.29 |
| 85.50 | 15=6 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1017.22 | AINCHI | 1004.78 | DELZ | 12.435 | ALP | 448.83 | ALPHI | 445.21 |
| 85.50 | 15=7 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1017.17 | AINCHI | 1004.78 | DELZ | 12.392 | ALP | 448.83 | ALPHI | 445.23 |
| 85.50 | 15=8 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1016.89 | AINCHI | 1004.78 | DELZ | 12.113 | ALP | 448.83 | ALPHI | 445.31 |
| 86.00 | 15=1 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1012.40 | AINCHI | 1004.78 | DELZ | 7.618  | ALP | 448.95 | ALPHI | 446.75 |
| 86.00 | 15=2 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1011.71 | AINCHI | 1004.78 | DELZ | 6.929  | ALP | 448.97 | ALPHI | 446.97 |
| 86.00 | 15=3 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1011.85 | AINCHI | 1004.78 | DELZ | 7.066  | ALP | 448.97 | ALPHI | 446.93 |
| 86.00 | 15=4 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1012.57 | AINCHI | 1004.78 | DELZ | 7.790  | ALP | 448.95 | ALPHI | 446.70 |
| 86.00 | 15=5 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1013.45 | AINCHI | 1004.78 | DELZ | 8.666  | ALP | 448.93 | ALPHI | 446.43 |
| 86.00 | 15=6 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1013.68 | AINCHI | 1004.78 | DELZ | 8.896  | ALP | 448.92 | ALPHI | 446.35 |
| 86.00 | 15=7 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1013.63 | AINCHI | 1004.78 | DELZ | 8.852  | ALP | 448.92 | ALPHI | 446.37 |
| 86.00 | 15=8 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1013.35 | AINCHI | 1004.78 | DELZ | 8.572  | ALP | 448.93 | ALPHI | 446.46 |
| 86.00 | 15=1 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1012.40 | AINCHI | 1004.78 | DELZ | 7.618  | ALP | 448.95 | ALPHI | 446.75 |
| 86.00 | 15=2 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1011.71 | AINCHI | 1004.78 | DELZ | 6.929  | ALP | 448.97 | ALPHI | 446.97 |
| 86.00 | 15=3 | ZCALC | 76 | 1019.78 | ZCALC | 75 | 1004.78 | AINCW | 1011.85 | AINCHI | 1004.78 | DELZ | 7.066  | ALP | 448.97 | ALPHI | 446.93 |

•PARTBN• TIME= 86.00 IS=4 ZCALC( 76)=1019.78 ZCALC( 75)=1004.78 AINCW=1012.57 AINCHI=1004.78 DELZ= 7.790 ALP=448.95 ALPHI=446.70  
•PARTBN• TIME= 86.00 IS=5 ZCALC( 76)=1019.78 ZCALC( 75)=1004.78 AINCW=1013.45 AINCHI=1004.78 DELZ= 8.666 ALP=448.93 ALPHI=446.43  
•PARTBN• TIME= 86.00 IS=6 ZCALC( 76)=1019.78 ZCALC( 75)=1004.78 AINCW=1013.68 AINCHI=1004.78 DELZ= 8.896 ALP=448.92 ALPHI=446.35  
•PARTBN• TIME= 86.00 IS=7 ZCALC( 76)=1019.78 ZCALC( 75)=1004.78 AINCW=1013.63 AINCHI=1004.78 DELZ= 8.852 ALP=448.92 ALPHI=446.37  
•PARTBN• TIME= 86.00 IS=8 ZCALC( 76)=1019.78 ZCALC( 75)=1004.78 AINCW=1013.35 AINCHI=1004.78 DELZ= 8.572 ALP=448.93 ALPHI=446.46



IGNITION TIME, TIME (S)

86.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10548773.     | 2371458.6    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10607467.     | 2384653.4    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 53307.320     | 11983.962    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .97010706+09  | .21808874+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.69090     | 256.69090    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .10194191+10  | .22917453+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6253075     | 1.6253075    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4185.2545     | 9226.9067    |
| FLUORATE INTEGRAL (KG,LBM)                 | SWDOTN               | 401179.39     | 884449.17    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIIF                 | 28.609652     | 63.073486    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 951.67270     | 2098.0792    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 258.20549     | 400219.32    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 60.861752     | 3714012.0    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 104356.12     | 230065.87    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1254.0385     | 2764.6816    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597295     | 1.1597295    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AW                   | 12.848401     | 28.325876    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.5186     | 5116.5369    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .93339532-01  | .93339532-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .42020388+09  | 609.45420    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .42904749+11  | 62228.077    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 6.2688035     | 9716.6649    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .92455061-02  | .36399631    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .83761962     | 32.977150    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.2116677     | 73940.498    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 53.892165     | 3208701.7    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3399.0697     | 6118.2175    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 251.93669     | 390502.65    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 59.648119     | 3639951.5    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 228.98116     | 13973288.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .41288489+09  | 598.83891    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .40659504+11  | 58971.625    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .92383460-02  | .36371442    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .92303903-02  | .36340120    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3397.5760     | 6115.6367    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5806917     | 2450.0770    |
| EXPANSION RATIO                            | EPR                  | 6.7998809     | 6.7998809    |
| PRESSURE RATIO                             | PEPO                 | .23130382-01  | .23130382-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

 ORIGINAL PAGE IS  
OF POOR QUALITY



### ATTACHMENT DIVIDING PLANE DATA:

| PO     | P      | T       | U      | M      | LP      | AP       | NDUT    | ORDUT  | IN/SEC | IN.    | IN/SEC | IN.    | IN.  |
|--------|--------|---------|--------|--------|---------|----------|---------|--------|--------|--------|--------|--------|------|
| PSIA   | PSIA   | DEG. F  | FT/SEC | INCHES | SQ. IN. | LB/SEC   | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.  |
| 609.45 | 609.45 | 6118.22 | 10.44  | .003   | 387.59  | 11950.82 | 227.68  | 224.28 | 3368   | 32.977 | .0000  | .000   | .000 |
| 609.45 | 609.44 | 6118.21 | 16.56  | .005   | 387.85  | 11967.64 | 361.81  | 134.24 | 3368   | 32.937 | .0000  | .000   | .000 |
| 609.44 | 609.43 | 6118.20 | 22.68  | .006   | 388.11  | 11984.72 | 496.04  | 134.33 | 3368   | 32.933 | .0000  | .000   | .000 |
| 609.43 | 609.42 | 6118.19 | 28.78  | .008   | 388.38  | 12001.33 | 630.36  | 134.42 | 3368   | 32.928 | .0000  | .000   | .000 |
| 609.42 | 609.41 | 6118.17 | 34.87  | .010   | 388.64  | 12018.12 | 764.76  | 134.51 | 3368   | 32.923 | .0000  | .000   | .000 |
| 609.41 | 609.40 | 6118.16 | 40.94  | .012   | 388.91  | 12034.88 | 899.26  | 134.60 | 3368   | 32.918 | .0000  | .000   | .000 |
| 609.40 | 609.39 | 6118.14 | 47.01  | .013   | 389.17  | 12051.61 | 1033.85 | 134.69 | 3368   | 32.913 | .0000  | .000   | .000 |
| 609.39 | 609.38 | 6118.11 | 53.06  | .015   | 389.43  | 12068.32 | 1168.52 | 134.78 | 3368   | 32.908 | .0000  | .000   | .000 |
| 609.37 | 609.36 | 6118.09 | 57.80  | .016   | 389.64  | 12081.39 | 1274.18 | 105.74 | 3368   | 32.903 | .0000  | .000   | .000 |
| 609.37 | 609.36 | 6118.09 | 58.31  | .017   | 342.30  | 11974.36 | 1274.18 | .00    | 3367   | 32.904 | .0000  | .000   | .000 |
| 609.36 | 609.35 | 6118.06 | 63.78  | .018   | 367.99  | 12004.40 | 1397.05 | 122.95 | 3367   | 32.904 | .0000  | .000   | .000 |
| 609.34 | 609.33 | 6118.04 | 68.48  | .019   | 388.80  | 12028.78 | 1503.07 | 106.09 | 3367   | 32.897 | .0000  | .000   | .000 |
| 609.31 | 609.30 | 6118.01 | 74.32  | .021   | 389.73  | 12058.88 | 1637.57 | 134.76 | 3367   | 32.891 | .0000  | .000   | .000 |
| 609.29 | 609.28 | 6117.97 | 80.12  | .023   | 390.66  | 12128.76 | 1772.69 | 135.08 | 3367   | 32.885 | .0000  | .000   | .000 |
| 609.26 | 609.25 | 6117.93 | 85.89  | .024   | 391.59  | 12178.44 | 1907.98 | 135.39 | 3367   | 32.879 | .0000  | .000   | .000 |
| 609.23 | 609.22 | 6117.89 | 91.63  | .026   | 392.51  | 12227.91 | 2043.58 | 135.71 | 3367   | 32.873 | .0000  | .000   | .000 |
| 609.20 | 609.19 | 6117.85 | 97.34  | .028   | 393.44  | 12277.18 | 2179.50 | 136.03 | 3367   | 32.867 | .0000  | .000   | .000 |
| 609.16 | 609.15 | 6117.81 | 103.02 | .029   | 394.37  | 12326.23 | 2315.74 | 136.34 | 3367   | 32.861 | .0000  | .000   | .000 |
| 609.12 | 609.11 | 6117.76 | 108.68 | .031   | 395.30  | 12375.07 | 2452.29 | 136.66 | 3367   | 32.855 | .0000  | .000   | .000 |
| 609.08 | 609.07 | 6117.71 | 114.31 | .032   | 396.22  | 12423.71 | 2589.16 | 136.97 | 3366   | 32.848 | .0000  | .000   | .000 |
| 609.04 | 609.03 | 6117.66 | 119.91 | .034   | 397.15  | 12472.13 | 2726.34 | 137.29 | 3366   | 32.842 | .0000  | .000   | .000 |
| 609.00 | 608.99 | 6117.60 | 125.44 | .036   | 398.08  | 12520.35 | 2863.84 | 137.60 | 3366   | 32.835 | .0000  | .000   | .000 |
| 608.95 | 608.94 | 6117.55 | 131.04 | .037   | 399.01  | 12568.36 | 3001.65 | 137.92 | 3366   | 32.828 | .0000  | .000   | .000 |
| 608.91 | 608.90 | 6117.49 | 136.57 | .039   | 399.93  | 12616.16 | 3139.78 | 138.23 | 3366   | 32.822 | .0000  | .000   | .000 |
| 608.86 | 608.85 | 6117.43 | 142.08 | .040   | 400.86  | 12663.75 | 3278.21 | 138.54 | 3365   | 32.815 | .0000  | .000   | .000 |
| 608.80 | 608.79 | 6117.37 | 147.56 | .042   | 401.79  | 12711.13 | 3416.97 | 138.86 | 3365   | 32.808 | .0000  | .000   | .000 |

|          |        |        |         |        |      |        |          |         |        |     |       |        |      |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|------|------|
| 620.204  | 606.93 | 606.07 | 6115.64 | 256.36 | .073 | 393.87 | 12352.16 | 5750.35 | 136.03 | .10 | .3631 | 32.608 | .000 | .000 |
| 643.204  | 607.83 | 605.90 | 6115.53 | 261.75 | .074 | 394.45 | 12387.76 | 5886.45 | 136.21 | .10 | .3631 | 32.598 | .000 | .000 |
| 658.204  | 607.73 | 605.72 | 6115.42 | 267.12 | .076 | 395.03 | 12423.22 | 6022.75 | 136.40 | .10 | .3630 | 32.587 | .000 | .000 |
| 673.204  | 607.63 | 605.53 | 6115.31 | 272.48 | .077 | 395.60 | 12458.53 | 6159.22 | 136.58 | .10 | .3630 | 32.577 | .000 | .000 |
| 688.204  | 607.53 | 605.35 | 6115.19 | 277.82 | .079 | 396.18 | 12493.70 | 6295.88 | 136.76 | .10 | .3630 | 32.567 | .000 | .000 |
| 703.204  | 607.42 | 605.16 | 6115.08 | 283.15 | .080 | 396.75 | 12528.73 | 6432.73 | 136.95 | .10 | .3629 | 32.556 | .000 | .000 |
| 718.204  | 607.31 | 604.96 | 6114.96 | 288.46 | .082 | 397.33 | 12563.61 | 6569.75 | 137.13 | .10 | .3629 | 32.546 | .000 | .000 |
| 728.191  | 607.25 | 604.86 | 6114.89 | 291.29 | .083 | 397.63 | 12582.13 | 6642.79 | 73.09  | .05 | .3628 | 32.535 | .000 | .000 |
| 741.191  | 607.10 | 604.66 | 6114.82 | 294.46 | .083 | 398.61 | 12700.19 | 6780.34 | 137.65 | .10 | .3628 | 32.529 | .000 | .000 |
| 746.336  | 607.05 | 604.59 | 6114.80 | 295.55 | .084 | 400.29 | 12751.00 | 6827.67 | 47.37  | .03 | .3628 | 32.524 | .000 | .000 |
| 760.346  | 606.99 | 605.24 | 6115.78 | 249.40 | .071 | 131.42 | 15097.15 | 6827.67 | .00    | .00 | .3629 | 32.573 | .000 | .000 |
| 761.346  | 607.16 | 605.17 | 6115.47 | 264.96 | .075 | 213.99 | 14335.37 | 6887.44 | 59.65  | .12 | .3629 | 32.573 | .000 | .000 |
| 776.346  | 607.34 | 605.07 | 6115.07 | 283.50 | .080 | 296.56 | 13570.86 | 6975.64 | 88.16  | .04 | .3629 | 32.549 | .000 | .000 |
| 791.346  | 607.56 | 604.92 | 6114.56 | 305.57 | .087 | 379.13 | 12803.60 | 7092.27 | 116.68 | .04 | .3629 | 32.519 | .000 | .000 |
| 799.831  | 607.61 | 604.87 | 6114.42 | 311.27 | .088 | 398.32 | 12624.95 | 7123.44 | 31.19  | .02 | .3628 | 32.483 | .000 | .000 |
| 807.831  | 607.47 | 604.66 | 6114.31 | 315.81 | .090 | 399.29 | 12687.95 | 7261.05 | 137.71 | .10 | .3628 | 32.478 | .000 | .000 |
| 824.831  | 607.34 | 604.44 | 6114.20 | 320.34 | .091 | 400.27 | 12750.51 | 7398.99 | 138.04 | .10 | .3628 | 32.468 | .000 | .000 |
| 839.831  | 607.20 | 604.23 | 6114.08 | 324.86 | .092 | 401.24 | 12812.63 | 7537.24 | 138.36 | .10 | .3627 | 32.458 | .000 | .000 |
| 854.781  | 607.06 | 604.01 | 6113.97 | 329.35 | .093 | 402.22 | 12874.04 | 7675.35 | 138.21 | .10 | .3627 | 32.448 | .000 | .000 |
| 864.781  | 606.81 | 603.78 | 6114.01 | 327.51 | .093 | 406.59 | 13186.48 | 7814.84 | 139.57 | .08 | .3626 | 32.438 | .000 | .000 |
| 884.781  | 606.56 | 603.56 | 6114.05 | 326.08 | .092 | 411.06 | 13488.29 | 7955.87 | 141.07 | .04 | .3625 | 32.444 | .000 | .000 |
| 894.781  | 606.32 | 603.35 | 6114.08 | 325.33 | .092 | 415.52 | 13779.48 | 8098.44 | 142.58 | .01 | .3624 | 32.448 | .000 | .000 |
| 914.781  | 606.09 | 603.13 | 6114.10 | 324.33 | .092 | 419.98 | 14060.96 | 8242.55 | 144.08 | .03 | .3624 | 32.451 | .000 | .000 |
| 929.741  | 605.88 | 602.92 | 6114.11 | 323.95 | .092 | 424.42 | 14330.01 | 8388.21 | 145.60 | .06 | .3623 | 32.452 | .000 | .000 |
| 944.781  | 605.67 | 602.71 | 6114.11 | 323.89 | .092 | 428.86 | 14509.35 | 8535.43 | 147.13 | .09 | .3623 | 32.453 | .000 | .000 |
| 959.781  | 605.46 | 602.51 | 6114.10 | 324.13 | .092 | 433.30 | 14638.07 | 8684.26 | 148.71 | .12 | .3625 | 32.454 | .000 | .000 |
| 974.781  | 605.26 | 602.30 | 6114.09 | 324.65 | .092 | 437.74 | 15076.17 | 8834.77 | 150.35 | .16 | .3629 | 32.454 | .000 | .000 |
| 989.781  | 605.07 | 602.10 | 6114.07 | 325.44 | .092 | 442.18 | 15303.65 | 8987.93 | 152.08 | .18 | .3635 | 32.455 | .000 | .000 |
| 1004.781 | 604.89 | 601.89 | 6114.04 | 326.51 | .093 | 446.62 | 15520.51 | 9141.15 | 153.91 | .21 | .3643 | 32.457 | .000 | .000 |
| 1019.781 | 604.79 | 601.78 | 6114.02 | 327.19 | .093 | 448.94 | 15632.56 | 9224.78 | 83.32  | .31 | .3648 | 32.101 | .000 | .000 |
| 1034.781 | 604.68 | 601.78 | 6114.17 | 321.26 | .091 | .00    | 15922.37 | 9225.14 | .00    | .36 | .3648 | 31.332 | .000 | .000 |
| 1049.791 | 604.65 | 601.78 | 6114.21 | 319.75 | .091 | .00    | 15997.77 | 9225.25 | .00    | .11 | .3648 | 31.024 | .000 | .000 |
| 1064.791 | 604.66 | 601.78 | 6114.20 | 320.32 | .091 | .00    | 15969.84 | 9225.53 | .00    | .28 | .3648 | 30.483 | .000 | .000 |
| 1079.791 | 604.67 | 601.78 | 6114.18 | 320.89 | .091 | .00    | 15941.80 | 9225.81 | .00    | .28 | .3648 | 29.942 | .000 | .000 |
| 1094.791 | 604.68 | 601.78 | 6114.17 | 321.40 | .091 | .00    | 15916.89 | 9226.06 | .00    | .25 | .3648 | 29.459 | .000 | .000 |
| APT(1)   | 598.84 | 572.11 | 6078.07 | 988.89 | .281 | .000   | 15023.73 | 9226.91 | .00    | .51 | .3637 | 29.460 | .000 | .000 |
| APT(1)   | 598.83 | 598.83 | 6115.64 | .02    | .000 | .000   | 10413.12 | .33     | .00    | .33 | .3634 | 20.670 | .000 | .000 |



•PARTUN• TIME= 87.00 IS=6 ZCALC( 761=1019.78 ZCALC( 751=1004.78 AINCH=1006.61 AINCHI=1004.78 DELZ= 1.829 ALP=449.11 ALPHI=448.63  
 •PARTUN• TIME= 87.00 IS=7 ZCALC( 761=1019.78 ZCALC( 751=1004.78 AINCH=1006.57 AINCHI=1004.78 DELZ= 1.784 ALP=449.11 ALPHI=448.64  
 •PARTUN• TIME= 87.00 IS=8 ZCALC( 761=1019.78 ZCALC( 751=1004.78 AINCH=1006.28 AINCHI=1004.78 DELZ= 1.500 ALP=449.12 ALPHI=448.74

IGNITION TIME, TIME (S)

87.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 10476345.     | 2355176.2    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 10530928.     | 2367446.4    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 54108.481     | 12164.070    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOTI               | .98061970+09  | .22045208+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 256.65051     | 256.65051    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .10299884+10  | .23155060+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6254149     | 1.6254149    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 4155.0768     | 9160.3763    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 405349.59     | 893642.87    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 29.039629     | 64.021423    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 922.74052     | 2034.2946    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 257.04493     | 398420.43    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 58.653771     | 3579272.7    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 100186.71     | 220073.86    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1249.8302     | 2755.4041    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1597246     | 1.1597246    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.847503     | 28.323895    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1559.4338     | 5116.2527    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .93203641-01  | .93203641-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .41687210+09  | 604.62187    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .43323289+11  | 62835.119    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 6.1139796     | 9476.6875    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .92197073-02  | .36298061    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .84685868     | 33.340893    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 1.1545456     | 70454.698    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 53.449286     | 3292187.4    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3398.3789     | 6117.0821    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| AXIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABCYL                | 250.93095     | 388943.75    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 573497260     | 3508698.1    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 230.25609     | 14051089.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .40966099+09  | 594.16303    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .41070779+11  | 59568.130    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NT+1,1)          | .92130444-02  | .36271829    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NT+2,1)          | .92051021-02  | .36240560    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NT+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NT+2,1)         | .52501000     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NT+2,3)         | 3396.7708     | 6114.1873    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5815311     | 2451.3781    |
| EXPANSION RATIO                                                 | EPR                  | 6.7962717     | 6.7962717    |
| PRESSURE RATIO                                                  | PEPO                 | .23146793-01  | .23146793-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ACQUISITION<br>REGION | PO     | P      | PSIA   | DEG. R  | T      | U      | M    | LP     | INCHES   | AP      | WDOT   | LB/SEC | DM/DT  | RB     | TAU    | RATO   | TAUTO. |
|-------------------------------|--------|--------|--------|---------|--------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|--------|
|                               | PSIA   |        |        |         |        | FT/SEC |      |        |          | SO. IN. | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    |
| FURE                          | 604.62 | 604.62 | 604.62 | 6117.08 | 10.13  |        | .003 | 389.86 | 12092.13 | 221.59  | 218.13 | -3.45  |        | .3628  | 33.341 | .0000  | .0000  |
| 15.000                        | 604.62 | 604.61 | 604.61 | 6117.08 | 16.24  |        | .005 | 390.12 | 12109.09 | 356.14  | 134.65 | .10    |        | .3628  | 33.301 | .0000  | .0000  |
| 35.000                        | 604.61 | 604.60 | 604.60 | 6117.07 | 22.35  |        | .006 | 390.39 | 12126.03 | 490.78  | 134.74 | .10    |        | .3628  | 33.296 | .0000  | .0000  |
| 45.000                        | 604.61 | 604.58 | 604.58 | 6117.05 | 28.45  |        | .008 | 390.65 | 12142.94 | 625.51  | 134.83 | .10    |        | .3628  | 33.291 | .0000  | .0000  |
| 63.000                        | 604.60 | 604.56 | 604.56 | 6117.04 | 34.53  |        | .010 | 390.92 | 12159.82 | 760.34  | 134.92 | .10    |        | .3628  | 33.287 | .0000  | .0000  |
| 75.000                        | 604.59 | 604.54 | 604.54 | 6117.02 | 40.60  |        | .012 | 391.18 | 12176.67 | 895.25  | 135.01 | .10    |        | .3628  | 33.282 | .0000  | .0000  |
| 95.000                        | 604.57 | 604.51 | 604.51 | 6117.00 | 46.66  |        | .013 | 391.45 | 12193.49 | 1030.25 | 135.10 | .10    |        | .3628  | 33.277 | .0000  | .0000  |
| 105.000                       | 604.56 | 604.48 | 604.48 | 6116.98 | 52.71  |        | .015 | 391.72 | 12210.29 | 1165.35 | 135.19 | .10    |        | .3627  | 33.272 | .0000  | .0000  |
| 116.761                       | 604.54 | 604.45 | 604.45 | 6116.96 | 57.45  |        | .016 | 391.92 | 12223.45 | 1271.33 | 106.06 | .08    |        | .3627  | 33.266 | .0000  | .0000  |
| 116.771                       | 604.54 | 604.45 | 604.45 | 6116.95 | 58.04  |        | .016 | 343.26 | 12098.96 | 1271.33 | .00    | .00    |        | .3627  | 33.267 | .0000  | .0000  |
| 131.771                       | 604.52 | 604.41 | 604.41 | 6116.93 | 63.45  |        | .018 | 369.68 | 12138.46 | 1394.32 | 123.06 | .07    |        | .3627  | 33.268 | .0000  | .0000  |
| 143.919                       | 604.51 | 604.38 | 604.38 | 6116.90 | 68.11  |        | .019 | 391.08 | 12170.52 | 1500.60 | 106.35 | .07    |        | .3627  | 33.260 | .0000  | .0000  |
| 158.919                       | 604.48 | 604.33 | 604.33 | 6116.87 | 73.94  |        | .021 | 392.00 | 12226.97 | 1635.66 | 135.17 | .10    |        | .3627  | 33.254 | .0000  | .0000  |
| 173.919                       | 604.46 | 604.28 | 604.28 | 6116.84 | 79.74  |        | .023 | 392.93 | 12271.22 | 1771.05 | 135.48 | .10    |        | .3627  | 33.248 | .0000  | .0000  |
| 188.919                       | 604.43 | 604.22 | 604.22 | 6116.80 | 85.50  |        | .024 | 393.86 | 12321.25 | 1906.75 | 135.80 | .10    |        | .3627  | 33.243 | .0000  | .0000  |
| 203.919                       | 604.40 | 604.17 | 604.17 | 6116.76 | 91.24  |        | .026 | 394.79 | 12371.07 | 2042.77 | 136.12 | .10    |        | .3627  | 33.237 | .0000  | .0000  |
| 218.919                       | 604.37 | 604.10 | 604.10 | 6116.72 | 96.95  |        | .027 | 395.72 | 12420.68 | 2179.10 | 136.43 | .10    |        | .3627  | 33.230 | .0000  | .0000  |
| 233.919                       | 604.33 | 604.04 | 604.04 | 6116.67 | 102.63 |        | .029 | 396.64 | 12470.07 | 2315.75 | 136.75 | .10    |        | .3627  | 33.224 | .0000  | .0000  |
| 248.919                       | 604.30 | 603.97 | 603.97 | 6116.63 | 108.29 |        | .031 | 397.57 | 12519.25 | 2452.71 | 137.06 | .10    |        | .3626  | 33.218 | .0000  | .0000  |
| 263.919                       | 604.26 | 603.89 | 603.89 | 6116.58 | 113.92 |        | .032 | 398.50 | 12568.22 | 2589.99 | 137.38 | .10    |        | .3626  | 33.212 | .0000  | .0000  |
| 278.919                       | 604.22 | 603.81 | 603.81 | 6116.53 | 119.52 |        | .034 | 399.43 | 12616.98 | 2727.58 | 137.69 | .10    |        | .3626  | 33.205 | .0000  | .0000  |
| 293.919                       | 604.17 | 603.73 | 603.73 | 6116.47 | 125.10 |        | .035 | 400.36 | 12665.52 | 2865.48 | 138.00 | .10    |        | .3626  | 33.198 | .0000  | .0000  |
| 308.919                       | 604.13 | 603.65 | 603.65 | 6116.42 | 130.65 |        | .037 | 401.28 | 12713.85 | 3003.70 | 138.32 | .10    |        | .3626  | 33.192 | .0000  | .0000  |
| 323.919                       | 604.08 | 603.56 | 603.56 | 6116.36 | 136.18 |        | .039 | 402.21 | 12761.97 | 3142.23 | 138.63 | .10    |        | .3626  | 33.185 | .0000  | .0000  |
| 338.919                       | 604.03 | 603.47 | 603.47 | 6116.30 | 141.69 |        | .040 | 403.14 | 12809.88 | 3281.08 | 138.94 | .10    |        | .3625  | 33.178 | .0000  | .0000  |
| 353.919                       | 603.98 | 603.37 | 603.37 | 6116.24 | 147.17 |        | .042 | 404.07 | 12857.58 | 3420.24 | 139.26 | .10    |        | .3625  | 33.171 | .0000  | .0000  |
| 368.919                       | 603.93 | 603.27 | 603.27 | 6116.17 | 152.63 |        | .043 | 405.00 | 12905.36 | 3559.71 | 139.57 | .10    |        | .3625  | 33.164 | .0000  | .0000  |
| 383.919                       | 603.87 | 603.17 | 603.17 | 6116.11 | 158.07 |        | .045 | 405.93 | 12952.33 | 3699.49 | 139.88 | .10    |        | .3625  | 33.157 | .0000  | .0000  |
| 398.919                       | 603.81 | 603.06 | 603.06 | 6116.04 | 163.49 |        | .046 | 406.85 | 12999.39 | 3839.58 | 140.19 | .10    |        | .3624  | 33.150 | .0000  | .0000  |
| 403.048                       | 603.83 | 603.03 | 603.03 | 6116.02 | 164.98 |        | .047 | 407.11 | 13012.30 | 3878.20 | 140.54 | .03    |        | .3624  | 33.142 | .0000  | .0000  |
| 418.048                       | 603.74 | 602.92 | 602.92 | 6115.94 | 171.39 |        | .048 | 405.25 | 13002.30 | 4018.21 | 140.10 | .10    |        | .3624  | 33.140 | .0000  | .0000  |
| 427.051                       | 603.71 | 602.85 | 602.85 | 6115.89 | 174.75 |        | .050 | 404.13 | 12996.50 | 4101.92 | 83.78  | .06    |        | .3624  | 33.134 | .0000  | .0000  |
| 427.061                       | 603.69 | 603.09 | 603.09 | 6116.25 | 146.38 |        | .041 | .80    | 15510.95 | 4101.92 | .00    | .00    |        | .3624  | 33.159 | .0000  | .0000  |
| 442.061                       | 603.09 | 603.07 | 603.07 | 6116.06 | 161.71 |        | .046 | 162.25 | 14136.78 | 4130.25 | 28.12  | .20    |        | .3624  | 33.160 | .0000  | .0000  |
| 457.061                       | 603.96 | 603.01 | 603.01 | 6115.76 | 183.68 |        | .052 | 323.70 | 12699.27 | 4214.11 | 83.81  | .05    |        | .3624  | 33.132 | .0000  | .0000  |
| 463.204                       | 604.04 | 602.96 | 602.96 | 6115.59 | 195.22 |        | .055 | 389.82 | 12092.29 | 4264.48 | 50.40  | .03    |        | .3624  | 33.091 | .0000  | .0000  |
| 478.204                       | 603.96 | 602.83 | 602.83 | 6115.51 | 208.80 |        | .057 | 390.39 | 12129.69 | 4398.94 | 134.56 | .10    |        | .3624  | 33.070 | .0000  | .0000  |
| 493.204                       | 603.89 | 602.89 | 602.89 | 6115.42 | 206.35 |        | .058 | 390.97 | 12166.93 | 4533.59 | 134.75 | .10    |        | .3624  | 33.060 | .0000  | .0000  |
| 508.204                       | 603.81 | 602.55 | 602.55 | 6115.33 | 211.89 |        | .060 | 391.54 | 12204.03 | 4668.44 | 134.94 | .10    |        | .3624  | 33.051 | .0000  | .0000  |
| 523.204                       | 603.73 | 602.40 | 602.40 | 6115.23 | 217.41 |        | .062 | 392.12 | 12240.98 | 4803.47 | 135.13 | .10    |        | .3623  | 33.041 | .0000  | .0000  |
| 538.204                       | 603.65 | 602.25 | 602.25 | 6115.14 | 222.91 |        | .063 | 392.70 | 12277.79 | 4938.68 | 135.32 | .10    |        | .3623  | 33.031 | .0000  | .0000  |
| 553.204                       | 603.56 | 602.10 | 602.10 | 6115.04 | 228.40 |        | .065 | 393.27 | 12314.45 | 5074.09 | 135.51 | .10    |        | .3623  | 33.022 | .0000  | .0000  |
| 568.204                       | 603.47 | 601.94 | 601.94 | 6114.94 | 233.87 |        | .066 | 393.85 | 12350.97 | 5209.68 | 135.69 | .10    |        | .3622  | 33.012 | .0000  | .0000  |
| 583.204                       | 603.39 | 601.78 | 601.78 | 6114.84 | 239.32 |        | .068 | 394.42 | 12387.34 | 5345.45 | 135.87 | .10    |        | .3622  | 33.002 | .0000  | .0000  |
| 598.204                       | 603.30 | 601.61 | 601.61 | 6114.74 | 244.75 |        | .069 | 395.00 | 12423.56 | 5481.41 | 136.06 | .10    |        | .3622  | 32.992 | .0000  | .0000  |
| 613.204                       | 603.20 | 601.45 | 601.45 | 6114.63 | 250.17 |        | .071 | 395.57 | 12459.64 | 5617.56 | 136.25 | .10    |        | .3621  | 32.981 | .0000  | .0000  |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|------|
| 626.204  | 603.11 | 601.28 | 6114.52 | 255.57 | .072 | 396.15 | 12495.50 | 5753.69 | 136.43 | .10 | .3621 | 32.971 | .0000 | .000 |
| 643.204  | 603.01 | 601.10 | 6114.42 | 260.96 | .074 | 396.73 | 12531.36 | 5890.41 | 136.61 | .10 | .3621 | 32.961 | .0000 | .000 |
| 658.204  | 602.91 | 600.92 | 6114.30 | 266.33 | .075 | 397.30 | 12567.30 | 6027.11 | 136.80 | .10 | .3620 | 32.950 | .0000 | .000 |
| 673.204  | 602.81 | 600.74 | 6114.19 | 271.69 | .077 | 397.88 | 12602.50 | 6164.00 | 136.98 | .10 | .3620 | 32.940 | .0000 | .000 |
| 688.204  | 602.71 | 600.56 | 6114.08 | 277.04 | .079 | 398.45 | 12637.85 | 6301.07 | 137.17 | .10 | .3619 | 32.929 | .0000 | .000 |
| 703.204  | 602.63 | 600.37 | 6113.96 | 282.37 | .080 | 399.03 | 12673.05 | 6438.32 | 137.35 | .10 | .3619 | 32.919 | .0000 | .000 |
| 718.204  | 602.49 | 600.18 | 6113.84 | 287.69 | .082 | 399.61 | 12708.11 | 6575.76 | 137.53 | .10 | .3619 | 32.908 | .0000 | .000 |
| 726.191  | 602.44 | 600.07 | 6113.78 | 290.51 | .082 | 399.91 | 12726.72 | 6649.01 | 73.30  | .05 | .3618 | 32.898 | .0000 | .000 |
| 741.191  | 602.29 | 599.88 | 6113.70 | 293.71 | .083 | 401.89 | 12853.48 | 6786.96 | 138.05 | .10 | .3618 | 32.892 | .0000 | .000 |
| 746.336  | 602.24 | 599.81 | 6113.68 | 294.81 | .084 | 402.57 | 12896.60 | 6834.43 | 47.50  | .03 | .3617 | 32.886 | .0000 | .000 |
| 746.346  | 602.19 | 600.42 | 6114.62 | 250.86 | .071 | 120.29 | 15142.79 | 6834.43 | .00    | .00 | .3619 | 32.935 | .0000 | .000 |
| 761.346  | 602.34 | 600.36 | 6114.32 | 265.78 | .075 | 207.00 | 14411.58 | 6890.93 | 56.36  | .13 | .3619 | 32.936 | .0000 | .000 |
| 776.346  | 602.52 | 600.26 | 6113.93 | 283.57 | .080 | 293.72 | 13677.73 | 6977.20 | 86.22  | .05 | .3619 | 32.911 | .0000 | .000 |
| 791.346  | 602.71 | 600.11 | 6113.44 | 304.75 | .086 | 380.44 | 12941.26 | 7093.25 | 116.08 | .03 | .3618 | 32.882 | .0000 | .000 |
| 794.831  | 602.76 | 600.07 | 6113.31 | 310.22 | .088 | 400.56 | 12769.78 | 7124.47 | 31.24  | .02 | .3618 | 32.846 | .0000 | .000 |
| 809.831  | 602.63 | 599.86 | 6113.20 | 314.77 | .089 | 401.56 | 12833.13 | 7262.48 | 138.11 | .09 | .3618 | 32.840 | .0000 | .000 |
| 824.831  | 602.50 | 599.64 | 6113.09 | 319.31 | .090 | 402.54 | 12896.03 | 7400.82 | 138.43 | .09 | .3617 | 32.830 | .0000 | .000 |
| 839.831  | 602.36 | 599.43 | 6112.97 | 323.83 | .092 | 403.52 | 12958.46 | 7539.47 | 138.75 | .09 | .3617 | 32.820 | .0000 | .000 |
| 854.781  | 602.23 | 599.21 | 6112.86 | 328.33 | .093 | 404.49 | 13020.22 | 7677.98 | 138.60 | .09 | .3616 | 32.811 | .0000 | .000 |
| 869.781  | 601.98 | 598.99 | 6112.89 | 326.95 | .093 | 408.87 | 13318.32 | 7817.87 | 139.96 | .07 | .3616 | 32.801 | .0000 | .000 |
| 884.781  | 601.74 | 598.77 | 6112.92 | 325.94 | .092 | 413.34 | 13606.24 | 7959.28 | 141.45 | .04 | .3615 | 32.806 | .0000 | .000 |
| 899.781  | 601.51 | 598.56 | 6112.94 | 325.28 | .092 | 417.80 | 13883.99 | 8102.24 | 142.96 | .00 | .3614 | 32.810 | .0000 | .000 |
| 914.781  | 601.29 | 598.35 | 6112.95 | 324.93 | .092 | 422.25 | 14151.57 | 8246.73 | 144.46 | .03 | .3613 | 32.813 | .0000 | .000 |
| 929.781  | 601.08 | 598.13 | 6112.95 | 324.89 | .092 | 426.70 | 14408.98 | 8392.77 | 145.98 | .07 | .3613 | 32.815 | .0000 | .000 |
| 944.781  | 600.88 | 597.93 | 6112.94 | 325.15 | .092 | 431.14 | 14656.22 | 8540.40 | 147.53 | .10 | .3615 | 32.815 | .0000 | .000 |
| 959.781  | 600.68 | 597.72 | 6112.93 | 325.67 | .092 | 435.58 | 14893.28 | 8689.66 | 149.13 | .13 | .3617 | 32.816 | .0000 | .000 |
| 974.781  | 600.48 | 597.51 | 6112.91 | 326.47 | .093 | 440.02 | 15120.17 | 8840.62 | 150.80 | .16 | .3621 | 32.817 | .0000 | .000 |
| 989.781  | 600.30 | 597.31 | 6112.88 | 327.53 | .093 | 444.46 | 15336.89 | 8993.38 | 152.57 | .19 | .3628 | 32.819 | .0000 | .000 |
| 1004.781 | 600.11 | 597.10 | 6112.85 | 328.85 | .093 | 448.88 | 15543.14 | 9147.81 | 154.22 | .22 | .3638 | 32.820 | .0000 | .000 |
| 1019.781 | 600.08 | 597.05 | 6112.87 | 327.93 | .093 | 336.84 | 15604.96 | 9158.35 | 10.24  | .30 | .3638 | 32.101 | .0000 | .000 |
| 1034.781 | 599.96 | 597.08 | 6113.04 | 321.34 | .091 | .00    | 15920.02 | 9158.60 | .00    | .25 | .3638 | 31.332 | .0000 | .000 |
| 1040.791 | 599.94 | 597.08 | 6113.07 | 319.90 | .091 | .00    | 15977.77 | 9158.71 | .00    | .11 | .3638 | 31.024 | .0000 | .000 |
| 1055.791 | 599.95 | 597.08 | 6113.06 | 320.47 | .091 | .00    | 15969.84 | 9158.99 | .00    | .28 | .3638 | 30.483 | .0000 | .000 |
| 1070.791 | 599.96 | 597.08 | 6113.04 | 321.04 | .091 | .00    | 15941.80 | 9159.27 | .00    | .28 | .3638 | 29.942 | .0000 | .000 |
| 1084.171 | 599.97 | 597.08 | 6113.03 | 321.56 | .091 | .00    | 15916.69 | 9159.52 | .00    | .25 | .3638 | 29.459 | .0000 | .000 |
| AFTIA    | 594.16 | 567.01 | 6076.71 | 989.39 | .281 | .0000  | 15023.73 | 9160.38 | .00    | .52 | .3627 | 29.460 | .0000 | .000 |
| AFTIB    | 594.15 | 594.15 | 6114.19 | .02    | .000 | .0000  | 15013.12 | .34     | .00    | .34 | .3624 | 20.670 | .0000 | .000 |



|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+02                            | 6.0454+02  | 6.0445+02 | 6.1170+03   | 4.2663+01   | 1.6460+04     | 0.0000         | 0.0000        | 0.0000       | 0.0000              | 1.2713+03       |
| AFT     | 1.1677+02                            | 6.0454+02  | 6.0445+02 | 6.1170+03   | 4.2660+01   | 1.6460+04     | 0.0000         | 0.0000        | 0.0000       | 0.0000              | 1.2713+03       |

GAS BUILDUP IN SLOT, DW/DT = -1.9905-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 6.0371+02 | 6.0285+02 | 6.1159+03 | 1.3863+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1019+03 |
| AFT     | 4.2706+02 | 6.0394+02 | 6.0309+02 | 6.1162+03 | 1.3859+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1019+03 |

GAS BUILDUP IN SLOT, DW/DT = -1.9770-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 6.0224+02 | 5.9981+02 | 6.1137+03 | 2.3207+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8344+03 |
| AFT     | 7.4635+02 | 6.0286+02 | 6.0042+02 | 6.1146+03 | 2.3187+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8344+03 |

GAS BUILDUP IN SLOT, DW/DT = -1.9733-04

|                                  |           |              |                   |            |         |               |         |        |             |            |              |
|----------------------------------|-----------|--------------|-------------------|------------|---------|---------------|---------|--------|-------------|------------|--------------|
| WEB BURNOUT INCREMENT LOCATION = | 1004.7810 | SECTOR NO. = | 1                 | TAU =      | 32.8707 | TAUWDP =      | 32.8707 | TIME = | 87.00       |            |              |
| WEB BURNOUT INCREMENT LOCATION = | 1004.7810 | SECTOR NO. = | 4                 | TAU =      | 32.8707 | TAUWDP =      | 32.8707 | TIME = | 87.00       |            |              |
| WEB BURNOUT INCREMENT LOCATION = | 1004.7810 | SECTOR NO. = | 5                 | TAU =      | 32.8707 | TAUWDP =      | 32.8707 | TIME = | 87.00       |            |              |
| WEB BURNOUT INCREMENT LOCATION = | 1004.7810 | SECTOR NO. = | 6                 | TAU =      | 32.8707 | TAUWDP =      | 32.8707 | TIME = | 87.00       |            |              |
| WEB BURNOUT INCREMENT LOCATION = | 1004.7810 | SECTOR NO. = | 7                 | TAU =      | 32.8707 | TAUWDP =      | 32.8707 | TIME = | 87.00       |            |              |
| WEB BURNOUT INCREMENT LOCATION = | 1004.7810 | SECTOR NO. = | 8                 | TAU =      | 32.8707 | TAUWDP =      | 32.8707 | TIME = | 87.00       |            |              |
| PARTBN TIME =                    | 87.50     | IS=1         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.78 | AINCHI= | 989.78 | DELZ=11.998 | ALP=449.24 | ALPHI=445.73 |
| PARTBN TIME =                    | 87.50     | IS=2         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.09 | AINCHI= | 989.78 | DELZ=11.308 | ALP=449.25 | ALPHI=445.95 |
| PARTBN TIME =                    | 87.50     | IS=3         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.23 | AINCHI= | 989.78 | DELZ=11.447 | ALP=449.25 | ALPHI=445.91 |
| PARTBN TIME =                    | 87.50     | IS=4         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.96 | AINCHI= | 989.78 | DELZ=12.175 | ALP=449.23 | ALPHI=445.68 |
| PARTBN TIME =                    | 87.50     | IS=5         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1002.85 | AINCHI= | 989.78 | DELZ=13.071 | ALP=449.21 | ALPHI=445.41 |
| PARTBN TIME =                    | 87.50     | IS=6         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1003.09 | AINCHI= | 989.78 | DELZ=13.305 | ALP=449.20 | ALPHI=445.33 |
| PARTBN TIME =                    | 87.50     | IS=7         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1003.04 | AINCHI= | 989.78 | DELZ=13.260 | ALP=449.20 | ALPHI=445.34 |
| PARTBN TIME =                    | 87.50     | IS=8         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1002.76 | AINCHI= | 989.78 | DELZ=12.974 | ALP=449.21 | ALPHI=445.43 |
| PARTBN TIME =                    | 87.50     | IS=1         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.78 | AINCHI= | 989.78 | DELZ=11.998 | ALP=449.24 | ALPHI=445.73 |
| PARTBN TIME =                    | 87.50     | IS=2         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.09 | AINCHI= | 989.78 | DELZ=11.308 | ALP=449.25 | ALPHI=445.95 |
| PARTBN TIME =                    | 87.50     | IS=3         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.23 | AINCHI= | 989.78 | DELZ=11.447 | ALP=449.25 | ALPHI=445.91 |
| PARTBN TIME =                    | 87.50     | IS=4         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1001.96 | AINCHI= | 989.78 | DELZ=12.175 | ALP=449.23 | ALPHI=445.68 |
| PARTBN TIME =                    | 87.50     | IS=5         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1002.85 | AINCHI= | 989.78 | DELZ=13.071 | ALP=449.21 | ALPHI=445.41 |
| PARTBN TIME =                    | 87.50     | IS=6         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1003.09 | AINCHI= | 989.78 | DELZ=13.305 | ALP=449.20 | ALPHI=445.33 |
| PARTBN TIME =                    | 87.50     | IS=7         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1003.04 | AINCHI= | 989.78 | DELZ=13.260 | ALP=449.20 | ALPHI=445.34 |
| PARTBN TIME =                    | 87.50     | IS=8         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=1002.76 | AINCHI= | 989.78 | DELZ=12.974 | ALP=449.21 | ALPHI=445.43 |
| PARTBN TIME =                    | 88.00     | IS=1         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=998.25  | AINCHI= | 989.78 | DELZ=8.473  | ALP=449.33 | ALPHI=446.87 |
| PARTBN TIME =                    | 88.00     | IS=2         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=997.56  | AINCHI= | 989.78 | DELZ=7.777  | ALP=449.35 | ALPHI=447.09 |
| PARTBN TIME =                    | 88.00     | IS=3         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=997.70  | AINCHI= | 989.78 | DELZ=7.917  | ALP=449.34 | ALPHI=447.05 |
| PARTBN TIME =                    | 88.00     | IS=4         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=998.43  | AINCHI= | 989.78 | DELZ=8.651  | ALP=449.32 | ALPHI=446.82 |
| PARTBN TIME =                    | 88.00     | IS=5         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=999.33  | AINCHI= | 989.78 | DELZ=9.550  | ALP=449.30 | ALPHI=446.54 |
| PARTBN TIME =                    | 88.00     | IS=6         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=999.57  | AINCHI= | 989.78 | DELZ=9.786  | ALP=449.29 | ALPHI=446.46 |
| PARTBN TIME =                    | 88.00     | IS=7         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=999.52  | AINCHI= | 989.78 | DELZ=9.741  | ALP=449.30 | ALPHI=446.48 |
| PARTBN TIME =                    | 88.00     | IS=8         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=999.23  | AINCHI= | 989.78 | DELZ=9.453  | ALP=449.30 | ALPHI=446.57 |
| PARTBN TIME =                    | 88.00     | IS=1         | ZCALC(75)=1004.78 | ZCALC(74)= | 989.78  | AINCW=998.25  | AINCHI= | 989.78 | DELZ=8.473  | ALP=449.33 | ALPHI=446.87 |



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•PARTBN• TIME= 88.00 IS=2 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 997.56 AINCHI= 989.78 DELZ= 7.777 ALP=449.35 ALPHI=447.09  
•PARTBN• TIME= 88.00 IS=3 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 997.70 AINCHI= 989.78 DELZ= 7.917 ALP=449.34 ALPHI=447.05  
•PARTBN• TIME= 88.00 IS=4 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 998.43 AINCHI= 989.78 DELZ= 8.651 ALP=449.32 ALPHI=446.82  
•PARTBN• TIME= 88.00 IS=5 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 999.33 AINCHI= 989.78 DELZ= 9.550 ALP=449.30 ALPHI=446.54  
•PARTBN• TIME= 88.00 IS=6 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 999.57 AINCHI= 989.78 DELZ= 9.786 ALP=449.29 ALPHI=446.46  
•PARTBN• TIME= 88.00 IS=7 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 999.52 AINCHI= 989.78 DELZ= 9.741 ALP=449.30 ALPHI=446.48  
•PARTBN• TIME= 88.00 IS=8 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCW= 999.23 AINCHI= 989.78 DELZ= 9.453 ALP=449.30 ALPHI=446.57

IGNITION TIME, TIME (S)

88.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10403451.     | 2338788.9    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10453719.     | 2350134.5    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 54908.687     | 12343.964    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOT                | .99105937*09  | .2227901*09  |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.60942     | 256.60942    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT                | .10404006*10  | .23390934*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6255259     | 1.6255259    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4124.7161     | 9093.4424    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 409409.40     | 902769.60    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 29.469694     | 64.968231    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 893.37885     | 1969.5632    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 255.07862     | 396612.66    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 56.466616     | 3445804.3    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 96047.733     | 211749.01    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1253.5273     | 2763.5546    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597198     | 1.1597198    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.046588     | 28.321878    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.3487     | 5115.9733    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .93691140-01  | .93691140-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .41352606*09  | 599.76884    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .43738479*11  | 63437.301    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 5.9595906     | 9237.3840    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .91936638-02  | .36195527    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .85607181     | 33.703615    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.0990069     | 67065.517    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.004825     | 3295576.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3397.7358     | 6115.9245    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 249.91903     | 387375.28    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCTL                | 55.365343     | 3378618.8    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 233.48952     | 14248405.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .40642325*09  | 589.46709    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPOND                | .41478813*11  | 60159.932    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NT+1,1)          | .91875033-02  | .36171273    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NT+2,1)          | .91795750-02  | .36140060    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NT+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NT+2,1)         | .52501800     | 23.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NT+2,3)         | 3395.9821     | 6112.7317    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5823651     | 2452.6707    |
| EXPANSION RATIO                            | EPR                  | 6.7926898     | 6.7926898    |
| PRESSURE RATIO                             | PEPO                 | .23163108-01  | .23163108-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDT   | LB/SEC | IN/SEC | TAU    | RBTU   | TAUTO. |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    |
| FUEL                        | 599.77 | 599.76 | 6115.92 | 9.81   | .003 | 392.12 | 12233.87 | 215.46  | 212.02 | -3.44  | .3617  | 33.704 | .0000  | .000   |
| 15.000                      | 599.76 | 599.76 | 6115.92 | 15.92  | .004 | 392.39 | 12250.93 | 350.42  | 135.09 | .10    | .3617  | 33.663 | .0000  | .000   |
| 30.000                      | 599.75 | 599.75 | 6115.91 | 22.03  | .006 | 392.66 | 12267.96 | 485.46  | 135.14 | .10    | .3617  | 33.659 | .0000  | .000   |
| 45.000                      | 599.74 | 599.74 | 6115.90 | 28.12  | .008 | 392.92 | 12284.96 | 620.59  | 135.23 | .10    | .3617  | 33.654 | .0000  | .000   |
| 60.000                      | 599.73 | 599.73 | 6115.88 | 34.20  | .010 | 393.19 | 12301.94 | 755.82  | 135.32 | .10    | .3617  | 33.649 | .0000  | .000   |
| 75.000                      | 599.72 | 599.69 | 6115.86 | 40.27  | .011 | 393.46 | 12318.89 | 891.14  | 135.41 | .10    | .3617  | 33.644 | .0000  | .000   |
| 90.000                      | 599.72 | 599.66 | 6115.84 | 46.32  | .013 | 393.72 | 12335.81 | 1026.54 | 135.50 | .10    | .3617  | 33.639 | .0000  | .000   |
| 105.000                     | 599.71 | 599.63 | 6115.82 | 52.37  | .015 | 393.99 | 12352.70 | 1162.04 | 135.59 | .10    | .3617  | 33.634 | .0000  | .000   |
| 116.761                     | 599.69 | 599.60 | 6115.80 | 57.10  | .016 | 394.20 | 12365.92 | 1268.34 | 106.38 | .08    | .3617  | 33.629 | .0000  | .000   |
| 116.771                     | 599.69 | 599.60 | 6115.80 | 57.77  | .016 | 344.22 | 12223.56 | 1268.34 | .00    | .00    | .3617  | 33.630 | .0000  | .000   |
| 131.771                     | 599.67 | 599.56 | 6115.77 | 63.12  | .018 | 371.36 | 12272.76 | 1391.44 | 123.17 | .07    | .3617  | 33.630 | .0000  | .000   |
| 143.919                     | 599.66 | 599.53 | 6115.75 | 67.74  | .019 | 393.34 | 12312.68 | 1497.97 | 106.60 | .07    | .3617  | 33.623 | .0000  | .000   |
| 158.919                     | 599.63 | 599.48 | 6115.72 | 73.57  | .021 | 394.27 | 12363.50 | 1633.44 | 135.57 | .10    | .3617  | 33.617 | .0000  | .000   |
| 173.919                     | 599.61 | 599.43 | 6115.68 | 79.36  | .022 | 395.20 | 12414.09 | 1769.22 | 135.88 | .10    | .3617  | 33.611 | .0000  | .000   |
| 188.919                     | 599.58 | 599.38 | 6115.64 | 85.13  | .024 | 396.13 | 12464.48 | 1905.32 | 136.20 | .10    | .3617  | 33.605 | .0000  | .000   |
| 203.919                     | 599.55 | 599.32 | 6115.60 | 90.87  | .026 | 397.06 | 12514.64 | 2041.73 | 136.51 | .10    | .3617  | 33.599 | .0000  | .000   |
| 218.919                     | 599.52 | 599.26 | 6115.56 | 96.58  | .027 | 397.98 | 12564.59 | 2178.46 | 136.83 | .10    | .3616  | 33.593 | .0000  | .000   |
| 233.919                     | 599.48 | 599.19 | 6115.52 | 102.26 | .029 | 398.91 | 12614.33 | 2315.51 | 137.14 | .10    | .3616  | 33.587 | .0000  | .000   |
| 248.919                     | 599.45 | 599.12 | 6115.47 | 107.97 | .031 | 399.84 | 12663.85 | 2452.87 | 137.46 | .10    | .3616  | 33.580 | .0000  | .000   |
| 263.919                     | 599.41 | 599.05 | 6115.42 | 113.54 | .032 | 400.77 | 12713.15 | 2590.54 | 137.77 | .10    | .3616  | 33.574 | .0000  | .000   |
| 278.919                     | 599.37 | 598.97 | 6115.37 | 119.14 | .034 | 401.70 | 12762.24 | 2728.53 | 138.08 | .10    | .3616  | 33.567 | .0000  | .000   |
| 293.919                     | 599.33 | 598.89 | 6115.32 | 124.72 | .035 | 402.63 | 12811.11 | 2866.82 | 138.40 | .10    | .3616  | 33.561 | .0000  | .000   |
| 308.919                     | 599.28 | 598.81 | 6115.26 | 130.27 | .037 | 403.56 | 12859.76 | 3005.44 | 138.71 | .10    | .3615  | 33.554 | .0000  | .000   |
| 323.919                     | 599.24 | 598.72 | 6115.21 | 135.80 | .038 | 404.49 | 12908.20 | 3144.36 | 139.02 | .10    | .3615  | 33.547 | .0000  | .000   |
| 338.919                     | 599.19 | 598.63 | 6115.15 | 141.31 | .040 | 405.41 | 12956.42 | 3283.60 | 139.33 | .10    | .3615  | 33.540 | .0000  | .000   |
| 353.919                     | 599.14 | 598.54 | 6115.08 | 146.79 | .042 | 406.34 | 13004.43 | 3423.15 | 139.64 | .10    | .3615  | 33.533 | .0000  | .000   |
| 368.919                     | 599.08 | 598.44 | 6115.02 | 152.25 | .043 | 407.27 | 13052.22 | 3563.01 | 139.96 | .10    | .3615  | 33.526 | .0000  | .000   |
| 383.919                     | 599.03 | 598.33 | 6114.95 | 157.69 | .045 | 408.20 | 13099.80 | 3703.18 | 140.27 | .10    | .3614  | 33.519 | .0000  | .000   |
| 398.919                     | 598.97 | 598.23 | 6114.89 | 163.11 | .046 | 409.13 | 13147.16 | 3843.66 | 140.58 | .10    | .3614  | 33.512 | .0000  | .000   |
| 403.048                     | 598.95 | 598.20 | 6114.87 | 164.60 | .047 | 409.38 | 13160.15 | 3882.38 | 140.75 | .03    | .3614  | 33.504 | .0000  | .000   |
| 416.048                     | 598.93 | 598.09 | 6114.79 | 170.72 | .048 | 407.52 | 13149.47 | 4022.77 | 140.49 | .10    | .3614  | 33.502 | .0000  | .000   |
| 427.051                     | 598.87 | 598.02 | 6114.74 | 174.38 | .049 | 406.40 | 13143.25 | 4106.72 | 84.01  | .06    | .3614  | 33.496 | .0000  | .000   |
| 427.061                     | 598.85 | 598.24 | 6115.07 | 147.74 | .042 | 15.36  | 15508.32 | 4106.72 | .00    | .00    | .3614  | 33.521 | .0000  | .000   |
| 442.061                     | 598.96 | 598.23 | 6114.89 | 162.39 | .046 | 153.74 | 14192.11 | 4130.73 | 23.80  | .21    | .3614  | 33.522 | .0000  | .000   |
| 457.061                     | 599.11 | 598.17 | 6114.61 | 183.41 | .052 | 322.83 | 12815.26 | 4212.75 | 81.96  | .05    | .3614  | 33.494 | .0000  | .000   |
| 463.204                     | 599.18 | 598.12 | 6114.45 | 194.43 | .055 | 392.08 | 12233.89 | 4263.08 | 50.35  | .03    | .3614  | 33.453 | .0000  | .000   |
| 478.204                     | 599.10 | 597.99 | 6114.36 | 205.01 | .057 | 392.66 | 12271.50 | 4397.94 | 134.96 | .10    | .3614  | 33.432 | .0000  | .000   |
| 493.204                     | 599.03 | 597.85 | 6114.27 | 205.57 | .058 | 393.23 | 12308.96 | 4533.00 | 135.15 | .10    | .3614  | 33.423 | .0000  | .000   |
| 508.204                     | 598.95 | 597.71 | 6114.18 | 211.11 | .060 | 393.81 | 12346.27 | 4668.24 | 135.34 | .10    | .3613  | 33.413 | .0000  | .000   |
| 523.204                     | 598.87 | 597.57 | 6114.09 | 216.63 | .061 | 394.38 | 12383.43 | 4803.67 | 135.53 | .10    | .3613  | 33.403 | .0000  | .000   |
| 538.204                     | 598.79 | 597.42 | 6113.99 | 222.14 | .063 | 394.96 | 12420.45 | 4939.28 | 135.71 | .10    | .3613  | 33.394 | .0000  | .000   |
| 553.204                     | 598.71 | 597.27 | 6113.90 | 227.62 | .065 | 395.54 | 12457.31 | 5075.08 | 135.92 | .10    | .3612  | 33.384 | .0000  | .000   |
| 568.204                     | 598.62 | 597.11 | 6113.80 | 233.09 | .066 | 396.11 | 12494.03 | 5211.07 | 136.08 | .10    | .3612  | 33.374 | .0000  | .000   |
| 583.204                     | 598.54 | 596.95 | 6113.70 | 238.55 | .068 | 396.69 | 12530.60 | 5347.25 | 136.27 | .10    | .3612  | 33.364 | .0000  | .000   |
| 598.204                     | 598.45 | 596.79 | 6113.59 | 243.98 | .069 | 397.27 | 12567.02 | 5483.60 | 136.46 | .10    | .3611  | 33.353 | .0000  | .000   |
| 613.204                     | 598.36 | 596.63 | 6113.49 | 249.40 | .071 | 397.84 | 12603.29 | 5620.15 | 136.64 | .10    | .3611  | 33.343 | .0000  | .000   |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 628.204  | 598.26 | 596.46 | 6113.38 | 254.81 | .072 | 398.42 | 12639.41 | 5756.88 | 136.82 | .10 | .3611 | 33.333 | .0000 | .0000 |
| 643.204  | 598.17 | 596.28 | 6113.27 | 263.20 | .074 | 399.00 | 12675.39 | 5893.79 | 137.01 | .10 | .3610 | 33.322 | .0000 | .0000 |
| 658.204  | 598.07 | 596.11 | 6113.16 | 265.57 | .075 | 399.57 | 12711.21 | 6030.89 | 137.19 | .10 | .3610 | 33.312 | .0000 | .0000 |
| 673.204  | 597.97 | 595.93 | 6113.05 | 270.94 | .077 | 400.15 | 12746.89 | 6168.17 | 137.38 | .10 | .3610 | 33.301 | .0000 | .0000 |
| 688.204  | 597.87 | 595.74 | 6112.94 | 276.28 | .078 | 400.72 | 12782.41 | 6305.63 | 137.56 | .09 | .3609 | 33.291 | .0000 | .0000 |
| 703.204  | 597.76 | 595.56 | 6112.82 | 281.62 | .080 | 401.30 | 12817.79 | 6443.28 | 137.74 | .09 | .3609 | 33.280 | .0000 | .0000 |
| 718.204  | 597.66 | 595.37 | 6112.70 | 286.94 | .081 | 401.88 | 12853.02 | 6581.11 | 137.92 | .09 | .3608 | 33.270 | .0000 | .0000 |
| 733.191  | 597.60 | 595.27 | 6112.64 | 289.77 | .082 | 402.18 | 12871.72 | 6654.57 | 138.51 | .05 | .3608 | 33.259 | .0000 | .0000 |
| 748.191  | 597.45 | 595.07 | 6112.56 | 292.98 | .083 | 404.16 | 12999.18 | 6792.92 | 138.44 | .09 | .3608 | 33.253 | .0000 | .0000 |
| 763.336  | 597.40 | 595.00 | 6112.54 | 294.09 | .083 | 404.84 | 13042.53 | 6840.52 | 47.64  | .03 | .3607 | 33.248 | .0000 | .0000 |
| 778.346  | 597.36 | 595.59 | 6113.43 | 252.40 | .072 | 109.18 | 15184.28 | 6840.52 | .00    | .00 | .3608 | 33.297 | .0000 | .0000 |
| 793.346  | 597.51 | 595.53 | 6113.14 | 266.65 | .076 | 200.04 | 14485.03 | 6893.76 | 53.10  | .14 | .3608 | 33.297 | .0000 | .0000 |
| 808.346  | 597.67 | 595.44 | 6112.77 | 283.69 | .080 | 290.89 | 13783.27 | 6978.10 | 84.29  | .05 | .3608 | 33.273 | .0000 | .0000 |
| 823.346  | 597.85 | 595.29 | 6112.31 | 303.96 | .086 | 381.74 | 13079.00 | 7093.56 | 115.49 | .03 | .3608 | 33.243 | .0000 | .0000 |
| 838.346  | 597.90 | 595.24 | 6112.18 | 309.20 | .088 | 402.84 | 12915.02 | 7124.84 | 31.30  | .02 | .3608 | 33.207 | .0000 | .0000 |
| 853.346  | 597.77 | 595.03 | 6112.07 | 313.76 | .089 | 403.83 | 12978.72 | 7263.24 | 138.49 | .09 | .3608 | 33.202 | .0000 | .0000 |
| 868.346  | 597.64 | 594.82 | 6111.96 | 318.31 | .090 | 404.81 | 13041.96 | 7401.96 | 138.81 | .09 | .3607 | 33.192 | .0000 | .0000 |
| 883.346  | 597.50 | 594.61 | 6111.84 | 322.84 | .092 | 405.79 | 13104.72 | 7541.00 | 139.13 | .09 | .3607 | 33.182 | .0000 | .0000 |
| 898.346  | 597.37 | 594.39 | 6111.73 | 327.35 | .093 | 406.77 | 13166.81 | 7679.89 | 138.98 | .09 | .3606 | 33.172 | .0000 | .0000 |
| 913.346  | 597.13 | 594.18 | 6111.75 | 326.42 | .093 | 411.14 | 13450.53 | 7820.16 | 140.34 | .07 | .3605 | 33.162 | .0000 | .0000 |
| 928.346  | 596.90 | 593.96 | 6111.77 | 325.82 | .092 | 415.61 | 13724.53 | 7961.95 | 141.83 | .04 | .3604 | 33.168 | .0000 | .0000 |
| 943.346  | 596.68 | 593.75 | 6111.77 | 325.54 | .092 | 420.07 | 13988.80 | 8105.27 | 143.33 | .00 | .3604 | 33.172 | .0000 | .0000 |
| 958.346  | 596.47 | 593.54 | 6111.77 | 325.55 | .092 | 424.52 | 14243.34 | 8250.14 | 144.83 | .03 | .3603 | 33.174 | .0000 | .0000 |
| 973.346  | 596.27 | 593.33 | 6111.76 | 325.84 | .092 | 428.97 | 14488.17 | 8396.56 | 146.35 | .07 | .3604 | 33.176 | .0000 | .0000 |
| 988.346  | 596.07 | 593.12 | 6111.75 | 326.41 | .093 | 433.41 | 14723.27 | 8544.58 | 147.92 | .10 | .3605 | 33.177 | .0000 | .0000 |
| 1003.346 | 595.87 | 592.91 | 6111.73 | 327.23 | .093 | 437.85 | 14948.65 | 8694.26 | 149.56 | .13 | .3609 | 33.178 | .0000 | .0000 |
| 1018.346 | 595.68 | 592.70 | 6111.70 | 328.31 | .093 | 442.29 | 15164.30 | 8845.69 | 151.27 | .16 | .3614 | 33.179 | .0000 | .0000 |
| 1033.346 | 595.50 | 592.49 | 6111.67 | 329.64 | .093 | 446.74 | 15370.23 | 8998.96 | 153.08 | .19 | .3622 | 33.181 | .0000 | .0000 |
| 1048.346 | 595.39 | 592.37 | 6111.64 | 330.55 | .094 | 449.32 | 15488.14 | 9091.09 | 91.87  | .27 | .3628 | 32.671 | .0000 | .0000 |
| 1063.346 | 595.29 | 592.37 | 6111.79 | 325.01 | .092 | .00    | 15752.92 | 9091.42 | .00    | .33 | .3628 | 32.101 | .0000 | .0000 |
| 1078.346 | 595.23 | 592.37 | 6111.88 | 321.42 | .091 | .00    | 15929.68 | 9091.68 | .00    | .26 | .3628 | 31.332 | .0000 | .0000 |
| 1093.346 | 595.20 | 592.37 | 6111.91 | 323.05 | .091 | .00    | 15997.77 | 9091.79 | .00    | .11 | .3628 | 31.024 | .0000 | .0000 |
| 1108.346 | 595.19 | 592.37 | 6111.90 | 323.62 | .091 | .00    | 15969.84 | 9092.07 | .00    | .28 | .3628 | 30.483 | .0000 | .0000 |
| 1123.346 | 595.22 | 592.37 | 6111.88 | 321.20 | .091 | .00    | 15941.83 | 9092.35 | .00    | .28 | .3628 | 29.942 | .0000 | .0000 |
| 1138.346 | 595.23 | 592.37 | 6111.87 | 321.71 | .091 | .00    | 15916.89 | 9092.60 | .00    | .25 | .3628 | 29.459 | .0000 | .0000 |
| 1153.346 | 595.47 | 593.10 | 6075.22 | 909.89 | .281 | .0000  | 15823.73 | 9093.44 | .00    | .51 | .3617 | 29.460 | .0000 | .0000 |
| 1168.346 | 599.46 | 589.46 | 6112.73 | -.02   | .000 | .0000  | 10413.12 | .33     | .00    | .33 | .3614 | 29.670 | .0000 | .0000 |

|          | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDT<br>LB/SEC | A9<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC. |
|----------|--------------------------------------|------------|-----------|-------------|-------------|---------------|----------------|---------------|--------------|---------------------|------------------|
| FOREWARD | 1.1676+02                            | 5.9969+02  | 5.9960+02 | 6.1158+03   | 4.2898+01   | 1.6460+04     | 0.0000         | 0.0000        | 0.0000       | 0.0000              | 1.2683+03        |
| AFT      | 1.1677+02                            | 5.9969+02  | 5.9960+02 | 6.1158+03   | 4.2899+01   | 1.6460+04     | 0.0000         | 0.0000        | 0.0000       | 0.0000              | 1.2683+03        |

GAS BUILDUP IN SLOT, DW/DT = -1.9719-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 4.2705+02 | 5.9887+02 | 5.9802+02 | 6.1147+03 | 1.3990+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1067+03 |
| AFT      | 4.2706+02 | 5.9909+02 | 5.9824+02 | 6.1151+03 | 1.3985+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1067+03 |

GAS BUILDUP IN SLOT, DW/DT = -1.9586-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 7.4634+02 | 5.9740+02 | 5.9500+02 | 6.1125+03 | 2.3412+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8405+03 |
| AFT      | 7.4635+02 | 5.9799+02 | 5.9559+02 | 6.1134+03 | 2.3393+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8405+03 |

GAS BUILDUP IN SLOT, DW/DT = -1.9530-04

|          |             |      |                    |                    |               |                |             |            |              |
|----------|-------------|------|--------------------|--------------------|---------------|----------------|-------------|------------|--------------|
| *PARTBN* | TIME= 88.50 | IS=1 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.73 | AINCHI= 989.78 | DELZ= 4.950 | ALP=449.42 | ALPHI=448.01 |
| *PARTBN* | TIME= 88.50 | IS=2 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.03 | AINCHI= 989.78 | DELZ= 4.247 | ALP=449.44 | ALPHI=448.24 |
| *PARTBN* | TIME= 88.50 | IS=3 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.17 | AINCHI= 989.78 | DELZ= 4.388 | ALP=449.44 | ALPHI=448.20 |
| *PARTBN* | TIME= 88.50 | IS=4 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.91 | AINCHI= 989.78 | DELZ= 5.130 | ALP=449.42 | ALPHI=447.96 |
| *PARTBN* | TIME= 88.50 | IS=5 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 995.82 | AINCHI= 989.78 | DELZ= 6.034 | ALP=449.39 | ALPHI=447.67 |
| *PARTBN* | TIME= 88.50 | IS=6 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 996.05 | AINCHI= 989.78 | DELZ= 6.271 | ALP=449.39 | ALPHI=447.60 |
| *PARTBN* | TIME= 88.50 | IS=7 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 996.01 | AINCHI= 989.78 | DELZ= 6.226 | ALP=449.39 | ALPHI=447.61 |
| *PARTBN* | TIME= 88.50 | IS=8 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 995.72 | AINCHI= 989.78 | DELZ= 5.936 | ALP=449.40 | ALPHI=447.70 |
| *PARTBN* | TIME= 88.50 | IS=1 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.73 | AINCHI= 989.78 | DELZ= 4.247 | ALP=449.44 | ALPHI=448.24 |
| *PARTBN* | TIME= 88.50 | IS=2 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.03 | AINCHI= 989.78 | DELZ= 4.388 | ALP=449.44 | ALPHI=448.20 |
| *PARTBN* | TIME= 88.50 | IS=3 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.17 | AINCHI= 989.78 | DELZ= 5.130 | ALP=449.42 | ALPHI=447.96 |
| *PARTBN* | TIME= 88.50 | IS=4 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 994.91 | AINCHI= 989.78 | DELZ= 6.034 | ALP=449.39 | ALPHI=447.67 |
| *PARTBN* | TIME= 88.50 | IS=5 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 995.82 | AINCHI= 989.78 | DELZ= 6.271 | ALP=449.39 | ALPHI=447.60 |
| *PARTBN* | TIME= 88.50 | IS=6 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 996.05 | AINCHI= 989.78 | DELZ= 6.226 | ALP=449.39 | ALPHI=447.61 |
| *PARTBN* | TIME= 88.50 | IS=7 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 996.01 | AINCHI= 989.78 | DELZ= 5.936 | ALP=449.40 | ALPHI=447.70 |
| *PARTBN* | TIME= 88.50 | IS=8 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 995.72 | AINCHI= 989.78 | DELZ= 5.429 | ALP=449.52 | ALPHI=447.15 |
| *PARTBN* | TIME= 89.00 | IS=1 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 991.21 | AINCHI= 989.78 | DELZ= .719  | ALP=449.54 | ALPHI=449.38 |
| *PARTBN* | TIME= 89.00 | IS=2 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 990.50 | AINCHI= 989.78 | DELZ= .859  | ALP=449.53 | ALPHI=449.34 |
| *PARTBN* | TIME= 89.00 | IS=3 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 990.64 | AINCHI= 989.78 | DELZ= 1.610 | ALP=449.51 | ALPHI=449.10 |
| *PARTBN* | TIME= 89.00 | IS=4 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 991.39 | AINCHI= 989.78 | DELZ= 2.521 | ALP=449.49 | ALPHI=448.80 |
| *PARTBN* | TIME= 89.00 | IS=5 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.30 | AINCHI= 989.78 | DELZ= 2.760 | ALP=449.48 | ALPHI=448.73 |
| *PARTBN* | TIME= 89.00 | IS=6 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.54 | AINCHI= 989.78 | DELZ= 2.714 | ALP=449.48 | ALPHI=448.74 |
| *PARTBN* | TIME= 89.00 | IS=7 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.50 | AINCHI= 989.78 | DELZ= 2.423 | ALP=449.49 | ALPHI=448.84 |
| *PARTBN* | TIME= 89.00 | IS=8 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.20 | AINCHI= 989.78 | DELZ= 1.429 | ALP=449.52 | ALPHI=449.15 |
| *PARTBN* | TIME= 89.00 | IS=1 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 991.21 | AINCHI= 989.78 | DELZ= .719  | ALP=449.54 | ALPHI=449.38 |
| *PARTBN* | TIME= 89.00 | IS=2 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 990.50 | AINCHI= 989.78 | DELZ= .859  | ALP=449.53 | ALPHI=449.34 |
| *PARTBN* | TIME= 89.00 | IS=3 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 990.64 | AINCHI= 989.78 | DELZ= 1.610 | ALP=449.51 | ALPHI=449.10 |
| *PARTBN* | TIME= 89.00 | IS=4 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 991.39 | AINCHI= 989.78 | DELZ= 2.521 | ALP=449.49 | ALPHI=448.80 |
| *PARTBN* | TIME= 89.00 | IS=5 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.30 | AINCHI= 989.78 | DELZ= 2.760 | ALP=449.48 | ALPHI=448.73 |
| *PARTBN* | TIME= 89.00 | IS=6 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.54 | AINCHI= 989.78 | DELZ= 2.714 | ALP=449.48 | ALPHI=448.74 |
| *PARTBN* | TIME= 89.00 | IS=7 | ZCALC( 75)=1004.78 | ZCALC( 74)= 989.78 | AINCW= 992.50 | AINCHI= 989.78 | DELZ= 2.423 | ALP=449.49 | ALPHI=448.84 |

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•PARTBN• TIME• 89.00 IS•8 ZCALC( 75)=1004.78 ZCALC( 74)= 989.78 AINCH= 992.20 AINCHI= 989.78 DELZ= 2.423 ALP=449.49 ALPHI=448.84

IGNITION TIME, TIME (S)

89.000000

DATE 071076

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| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|--------------------------------------------|----------------------|---------------|---------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10329829.     | 2322238.0     |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10377073.     | 2332858.7     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 55768.463     | 12523.747     |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)        | SKMOTI               | 0.10014261*10 | 0.22512453*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.56761     | 256.56761     |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)           | SKMVTI               | 0.10568961*10 | 0.23625085*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6256399     | 1.6256399     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4094.4720     | 9026.6554     |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 413598.99     | 911029.70     |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 29.898296     | 65.914459     |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 863.58772     | 1903.8850     |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 254.70043     | 394786.46     |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 54.217845     | 3308575.9     |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 91939.218     | 202691.28     |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1245.3044     | 2745.4261     |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597152     | 1.1597152     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.845437     | 28.319341     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.2638     | 5115.6948     |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | 0.94107338-01 | 0.94107338-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |               |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 0.41019344*09 | 594.93530     |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPHDT                | 0.44150340*11 | 64034.655     |
| BURN AREA (M**2,IN**2)                     | AHH                  | 5.8039732     | 8995.5565     |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | 0.91075092*02 | 0.36092871    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 0.86525896    | 34.065314     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | 1.0450443     | 63772.515     |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.050788     | 3298869.6     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3396.9036     | 6114.4265     |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |               |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 248.89686     | 385795.91     |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | 0.0000000     | 0.0000000     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 531.70835     | 3244683.5     |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 233.82986     | 14269174.     |
| <b>AFT END PARAMETERS:</b>                 |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 0.40319627*09 | 584.78676     |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPONDT               | 0.41883624*11 | 60747.062     |
| BURN AREA (M**2,IN**2)                     | AAN                  | 0.0000000     | 0.0000000     |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(N1*1,1)          | 0.91619157*02 | 0.36670535    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1*2,1)          | 0.91540013*02 | 0.36039375    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1*1,1)         | 0.74828400    | 29.460000     |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1*2,1)         | 0.52501800    | 20.670000     |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | 0.19662722*02 | 119.98929     |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0     |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)     | PRNT(N1*2,3)         | 3395.1561     | 6111.2809     |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733     |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |               |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5831936     | 2453.9550     |
| EXPANSION RATIO                            | EPR                  | 6.7891350     | 6.7891350     |
| PRESSURE RATIO                             | PEPO                 | 0.23179304-01 | 0.23179304-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | 0.37810250-01 | 0.37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000     |

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## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | INCHES | AP       | WDOT    | LB/SEC | DWDOT | LB/SEC | DM/DT  | IN/SEC | TAU  | IN/SEC | RBTO | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|-------|--------|--------|--------|------|--------|------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      |        | SQ. IN.  |         |        |       |        |        |        |      |        |      |       |
| FOKE                        | 594.94 | 594.93 | 6114.43 | 9.49   | .003 | 394.39 | 12376.03 | 209.38  | 205.89 | -3.50 | .3607  | 34.065 | .0000  | .000 | .000   | .000 | .000  |
| 15.003                      | 594.93 | 594.92 | 6114.42 | 15.61  | .004 | 394.65 | 12393.19 | 344.74  | 135.44 | .09   | .3607  | 34.025 | .0000  | .000 | .000   | .000 | .000  |
| 30.003                      | 594.93 | 594.91 | 6114.41 | 21.71  | .006 | 394.92 | 12410.31 | 480.18  | 135.54 | .09   | .3607  | 34.020 | .0000  | .000 | .000   | .000 | .000  |
| 45.003                      | 594.92 | 594.90 | 6114.40 | 27.80  | .008 | 395.19 | 12427.41 | 615.72  | 135.63 | .09   | .3607  | 34.015 | .0000  | .000 | .000   | .000 | .000  |
| 60.003                      | 594.91 | 594.88 | 6114.38 | 33.87  | .010 | 395.46 | 12444.48 | 751.34  | 135.72 | .09   | .3607  | 34.011 | .0000  | .000 | .000   | .000 | .000  |
| 75.000                      | 594.90 | 594.86 | 6114.37 | 39.94  | .011 | 395.72 | 12461.52 | 887.06  | 135.81 | .09   | .3607  | 34.006 | .0000  | .000 | .000   | .000 | .000  |
| 90.000                      | 594.89 | 594.83 | 6114.35 | 45.99  | .013 | 395.99 | 12478.54 | 1022.86 | 135.90 | .09   | .3607  | 34.001 | .0000  | .000 | .000   | .000 | .000  |
| 105.000                     | 594.87 | 594.80 | 6114.32 | 52.04  | .015 | 396.26 | 12495.52 | 1158.76 | 135.99 | .09   | .3607  | 33.996 | .0000  | .000 | .000   | .000 | .000  |
| 116.761                     | 594.86 | 594.77 | 6114.30 | 56.77  | .016 | 396.47 | 12508.82 | 1265.38 | 106.69 | .07   | .3607  | 33.990 | .0000  | .000 | .000   | .000 | .000  |
| 116.771                     | 594.86 | 594.77 | 6114.30 | 57.50  | .016 | 345.17 | 12348.15 | 1265.38 | .00    | .00   | .3607  | 33.991 | .0000  | .000 | .000   | .000 | .000  |
| 131.771                     | 594.84 | 594.73 | 6114.28 | 62.81  | .018 | 373.03 | 12407.28 | 1388.58 | 123.27 | .06   | .3607  | 33.991 | .0000  | .000 | .000   | .000 | .000  |
| 143.919                     | 594.82 | 594.70 | 6114.25 | 67.38  | .019 | 395.60 | 12455.26 | 1495.36 | 106.84 | .07   | .3607  | 33.984 | .0000  | .000 | .000   | .000 | .000  |
| 158.919                     | 594.80 | 594.65 | 6114.22 | 73.21  | .021 | 396.53 | 12500.43 | 1631.22 | 135.96 | .09   | .3607  | 33.978 | .0000  | .000 | .000   | .000 | .000  |
| 173.919                     | 594.78 | 594.60 | 6114.19 | 79.00  | .022 | 397.46 | 12557.39 | 1767.41 | 136.27 | .09   | .3607  | 33.972 | .0000  | .000 | .000   | .000 | .000  |
| 188.919                     | 594.75 | 594.55 | 6114.18 | 84.77  | .024 | 398.39 | 12608.12 | 1903.90 | 136.59 | .09   | .3606  | 33.966 | .0000  | .000 | .000   | .000 | .000  |
| 203.919                     | 594.72 | 594.49 | 6114.11 | 90.50  | .026 | 399.32 | 12658.63 | 2040.71 | 136.90 | .09   | .3606  | 33.960 | .0000  | .000 | .000   | .000 | .000  |
| 218.919                     | 594.69 | 594.43 | 6114.07 | 96.21  | .027 | 400.25 | 12708.93 | 2177.84 | 137.22 | .09   | .3606  | 33.954 | .0000  | .000 | .000   | .000 | .000  |
| 233.919                     | 594.65 | 594.37 | 6114.02 | 101.89 | .029 | 401.18 | 12759.00 | 2315.27 | 137.53 | .09   | .3606  | 33.948 | .0000  | .000 | .000   | .000 | .000  |
| 248.919                     | 594.62 | 594.30 | 6113.98 | 107.55 | .030 | 402.11 | 12808.86 | 2453.03 | 137.84 | .09   | .3606  | 33.942 | .0000  | .000 | .000   | .000 | .000  |
| 263.919                     | 594.58 | 594.23 | 6113.93 | 113.17 | .032 | 403.03 | 12858.49 | 2591.09 | 138.16 | .09   | .3606  | 33.935 | .0000  | .000 | .000   | .000 | .000  |
| 278.919                     | 594.54 | 594.15 | 6113.88 | 118.78 | .034 | 403.96 | 12907.91 | 2729.47 | 138.47 | .09   | .3606  | 33.929 | .0000  | .000 | .000   | .000 | .000  |
| 293.919                     | 594.50 | 594.07 | 6113.82 | 124.35 | .035 | 404.89 | 12957.10 | 2868.16 | 138.78 | .09   | .3605  | 33.922 | .0000  | .000 | .000   | .000 | .000  |
| 308.919                     | 594.46 | 593.99 | 6113.77 | 129.91 | .037 | 405.82 | 13006.08 | 3007.16 | 139.09 | .09   | .3605  | 33.915 | .0000  | .000 | .000   | .000 | .000  |
| 323.919                     | 594.41 | 593.90 | 6113.71 | 135.43 | .038 | 406.75 | 13054.84 | 3146.47 | 139.40 | .09   | .3605  | 33.909 | .0000  | .000 | .000   | .000 | .000  |
| 338.919                     | 594.36 | 593.81 | 6113.65 | 140.94 | .040 | 407.68 | 13103.37 | 3286.10 | 139.71 | .09   | .3605  | 33.902 | .0000  | .000 | .000   | .000 | .000  |
| 353.919                     | 594.31 | 593.72 | 6113.59 | 146.42 | .041 | 408.61 | 13151.69 | 3426.03 | 140.02 | .09   | .3605  | 33.895 | .0000  | .000 | .000   | .000 | .000  |
| 368.919                     | 594.26 | 593.62 | 6113.53 | 151.89 | .043 | 409.54 | 13199.99 | 3566.28 | 140.33 | .09   | .3604  | 33.887 | .0000  | .000 | .000   | .000 | .000  |
| 383.919                     | 594.20 | 593.52 | 6113.46 | 157.33 | .045 | 410.47 | 13247.67 | 3706.83 | 140.64 | .09   | .3604  | 33.880 | .0000  | .000 | .000   | .000 | .000  |
| 398.919                     | 594.15 | 593.42 | 6113.39 | 162.75 | .046 | 411.40 | 13295.33 | 3847.70 | 140.95 | .09   | .3604  | 33.873 | .0000  | .000 | .000   | .000 | .000  |
| 403.048                     | 594.13 | 593.39 | 6113.37 | 164.24 | .047 | 411.65 | 13308.41 | 3886.52 | 38.85  | .02   | .3604  | 33.865 | .0000  | .000 | .000   | .000 | .000  |
| 418.048                     | 594.08 | 593.28 | 6113.29 | 170.36 | .048 | 409.79 | 13297.94 | 4027.30 | 140.86 | .09   | .3603  | 33.863 | .0000  | .000 | .000   | .000 | .000  |
| 427.051                     | 594.05 | 593.21 | 6113.24 | 174.02 | .049 | 408.67 | 13290.41 | 4111.48 | 84.23  | .05   | .3603  | 33.857 | .0000  | .000 | .000   | .000 | .000  |
| 427.061                     | 594.03 | 593.42 | 6113.56 | 149.17 | .042 | 331.46 | 15499.86 | 4111.48 | .00    | .00   | .3603  | 33.883 | .0000  | .000 | .000   | .000 | .000  |
| 442.061                     | 594.14 | 593.40 | 6113.59 | 163.10 | .046 | 145.25 | 14244.13 | 4131.22 | 19.51  | .22   | .3604  | 33.883 | .0000  | .000 | .000   | .000 | .000  |
| 457.061                     | 594.27 | 593.35 | 6113.11 | 183.17 | .052 | 321.97 | 12930.54 | 4211.41 | 80.13  | .06   | .3604  | 33.855 | .0000  | .000 | .000   | .000 | .000  |
| 463.204                     | 594.34 | 593.30 | 6112.96 | 193.67 | .055 | 394.34 | 12375.89 | 4261.70 | 50.31  | .02   | .3604  | 33.814 | .0000  | .000 | .000   | .000 | .000  |
| 478.204                     | 594.27 | 593.17 | 6112.87 | 199.25 | .056 | 394.91 | 12413.72 | 4396.96 | 135.35 | .09   | .3604  | 33.793 | .0000  | .000 | .000   | .000 | .000  |
| 493.204                     | 594.19 | 593.03 | 6112.79 | 204.81 | .058 | 395.49 | 12451.70 | 4532.41 | 135.54 | .09   | .3603  | 33.784 | .0000  | .000 | .000   | .000 | .000  |
| 508.204                     | 594.12 | 592.89 | 6112.70 | 210.36 | .060 | 396.07 | 12488.92 | 4668.05 | 135.73 | .09   | .3603  | 33.774 | .0000  | .000 | .000   | .000 | .000  |
| 523.204                     | 594.04 | 592.75 | 6112.60 | 215.88 | .061 | 396.64 | 12526.29 | 4803.87 | 135.92 | .09   | .3603  | 33.764 | .0000  | .000 | .000   | .000 | .000  |
| 538.204                     | 593.96 | 592.61 | 6112.51 | 221.38 | .063 | 397.22 | 12563.52 | 4939.88 | 136.10 | .09   | .3603  | 33.755 | .0000  | .000 | .000   | .000 | .000  |
| 553.204                     | 593.88 | 592.46 | 6112.41 | 226.87 | .064 | 397.80 | 12600.58 | 5076.08 | 136.29 | .09   | .3602  | 33.745 | .0000  | .000 | .000   | .000 | .000  |
| 568.204                     | 593.79 | 592.30 | 6112.31 | 232.34 | .066 | 398.37 | 12637.50 | 5212.46 | 136.47 | .09   | .3602  | 33.735 | .0000  | .000 | .000   | .000 | .000  |
| 583.204                     | 593.71 | 592.15 | 6112.21 | 237.80 | .067 | 398.95 | 12674.27 | 5349.03 | 136.66 | .09   | .3602  | 33.725 | .0000  | .000 | .000   | .000 | .000  |
| 598.204                     | 593.62 | 591.98 | 6112.11 | 243.24 | .069 | 399.53 | 12710.08 | 5485.78 | 136.84 | .09   | .3601  | 33.714 | .0000  | .000 | .000   | .000 | .000  |
| 613.204                     | 593.53 | 591.02 | 6112.01 | 248.66 | .070 | 400.11 | 12747.35 | 5622.72 | 137.03 | .09   | .3601  | 33.704 | .0000  | .000 | .000   | .000 | .000  |



|          |        |        |         |        |      |        |          |         |        |     |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|------|
| 628-204  | 593.44 | 591.65 | 6111.90 | 254.07 | .072 | 403.68 | 12703.66 | 5759.84 | 137.21 | .09 | .3600 | 33.694 | .0000 | .000 |
| 643-204  | 593.34 | 591.40 | 6111.79 | 259.46 | .074 | 401.26 | 12819.82 | 5897.15 | 137.40 | .09 | .3600 | 33.683 | .0000 | .000 |
| 658-204  | 593.24 | 591.31 | 6111.68 | 264.84 | .075 | 401.04 | 12855.03 | 6034.64 | 137.58 | .09 | .3600 | 33.673 | .0000 | .000 |
| 673-204  | 593.14 | 591.13 | 6111.57 | 270.21 | .077 | 402.41 | 12891.68 | 6172.31 | 137.76 | .09 | .3599 | 33.662 | .0000 | .000 |
| 688-204  | 593.04 | 590.95 | 6111.45 | 275.56 | .078 | 402.99 | 12927.39 | 6310.17 | 137.94 | .09 | .3599 | 33.652 | .0000 | .000 |
| 703-204  | 592.94 | 590.77 | 6111.34 | 280.89 | .080 | 403.57 | 12962.94 | 6448.20 | 138.13 | .09 | .3598 | 33.641 | .0000 | .000 |
| 718-204  | 592.84 | 590.58 | 6111.22 | 286.22 | .081 | 404.14 | 12998.34 | 6586.42 | 138.31 | .09 | .3598 | 33.631 | .0000 | .000 |
| 726-191  | 592.78 | 590.48 | 6111.15 | 289.05 | .082 | 404.45 | 13017.13 | 6660.39 | 73.72  | .05 | .3598 | 33.620 | .0000 | .000 |
| 741-191  | 592.64 | 590.28 | 6111.08 | 292.29 | .083 | 406.43 | 13145.29 | 6798.82 | 138.82 | .09 | .3597 | 33.614 | .0000 | .000 |
| 746-336  | 592.59 | 590.22 | 6111.05 | 293.40 | .083 | 407.11 | 13188.07 | 6846.56 | 47.77  | .03 | .3597 | 33.608 | .0000 | .000 |
| 746-346  | 592.55 | 590.77 | 6111.90 | 254.01 | .072 | 98.12  | 15221.65 | 6846.56 | .00    | .00 | .3594 | 33.657 | .0000 | .000 |
| 761-346  | 592.69 | 590.72 | 6111.62 | 267.59 | .076 | 193.09 | 14553.76 | 6890.57 | 49.86  | .15 | .3598 | 33.658 | .0000 | .000 |
| 776-346  | 592.84 | 590.62 | 6111.27 | 283.84 | .080 | 288.66 | 13807.49 | 6979.01 | 82.38  | .06 | .3594 | 33.633 | .0000 | .000 |
| 791-346  | 593.01 | 590.47 | 6110.83 | 303.21 | .086 | 363.03 | 13216.82 | 7093.89 | 114.90 | .02 | .3598 | 33.604 | .0000 | .000 |
| 794-631  | 593.05 | 590.43 | 6110.71 | 308.21 | .087 | 405.13 | 13060.65 | 7125.22 | 31.35  | .02 | .3597 | 33.568 | .0000 | .000 |
| 809-631  | 592.92 | 590.22 | 6110.59 | 312.78 | .089 | 406.08 | 13124.71 | 7264.00 | 138.86 | .09 | .3597 | 33.562 | .0000 | .000 |
| 824-631  | 592.79 | 590.02 | 6110.48 | 317.34 | .090 | 407.07 | 13188.29 | 7403.10 | 139.19 | .09 | .3597 | 33.552 | .0000 | .000 |
| 839-631  | 592.66 | 589.81 | 6110.37 | 321.89 | .091 | 408.05 | 13251.38 | 7542.52 | 139.51 | .09 | .3596 | 33.542 | .0000 | .000 |
| 854-781  | 592.53 | 589.59 | 6110.25 | 326.40 | .093 | 409.03 | 13313.80 | 7681.79 | 139.36 | .08 | .3596 | 33.532 | .0000 | .000 |
| 869-781  | 592.30 | 589.38 | 6110.27 | 325.91 | .092 | 413.40 | 13583.10 | 7822.43 | 140.71 | .07 | .3595 | 33.522 | .0000 | .000 |
| 884-781  | 592.08 | 589.16 | 6110.27 | 325.72 | .092 | 417.87 | 13843.13 | 7964.60 | 142.19 | .03 | .3594 | 33.528 | .0000 | .000 |
| 899-781  | 591.87 | 588.95 | 6110.27 | 325.81 | .092 | 422.33 | 14093.88 | 8108.29 | 143.69 | .00 | .3593 | 33.532 | .0000 | .000 |
| 914-781  | 591.66 | 588.74 | 6110.26 | 326.18 | .092 | 426.78 | 14335.37 | 8253.53 | 145.23 | .04 | .3593 | 33.534 | .0000 | .000 |
| 929-781  | 591.47 | 588.53 | 6110.24 | 326.80 | .093 | 431.23 | 14567.57 | 8400.34 | 146.74 | .07 | .3594 | 33.536 | .0000 | .000 |
| 944-781  | 591.27 | 588.32 | 6110.22 | 327.68 | .093 | 435.67 | 14790.50 | 8548.77 | 148.33 | .10 | .3597 | 33.537 | .0000 | .000 |
| 959-781  | 591.08 | 588.11 | 6110.19 | 328.80 | .093 | 440.11 | 15004.16 | 8698.89 | 149.99 | .13 | .3601 | 33.538 | .0000 | .000 |
| 974-781  | 590.90 | 587.90 | 6110.16 | 330.16 | .094 | 444.56 | 15208.55 | 8850.80 | 151.74 | .16 | .3608 | 33.540 | .0000 | .000 |
| 989-781  | 590.72 | 587.70 | 6110.11 | 331.76 | .094 | 449.01 | 15403.66 | 9004.60 | 153.61 | .19 | .3617 | 33.543 | .0000 | .000 |
| 1004-781 | 590.64 | 587.67 | 6110.11 | 331.99 | .094 | 449.50 | 15427.53 | 9024.29 | 19.34  | .36 | .3618 | 32.871 | .0000 | .000 |
| 1019-781 | 590.57 | 587.67 | 6110.29 | 324.88 | .092 | .00    | 15766.06 | 9024.62 | .00    | .33 | .3617 | 32.101 | .0000 | .000 |
| 1034-781 | 590.50 | 587.67 | 6110.38 | 321.48 | .091 | .00    | 15933.34 | 9024.88 | .00    | .26 | .3617 | 31.332 | .0000 | .000 |
| 1049-791 | 590.48 | 587.67 | 6110.41 | 320.19 | .091 | .00    | 15997.77 | 9024.99 | .00    | .11 | .3617 | 31.024 | .0000 | .000 |
| 1055-791 | 590.49 | 587.67 | 6110.40 | 320.76 | .091 | .00    | 15969.84 | 9025.27 | .00    | .28 | .3617 | 30.483 | .0000 | .000 |
| 1070-791 | 590.50 | 587.67 | 6110.38 | 321.34 | .091 | .00    | 15941.80 | 9025.55 | .00    | .28 | .3617 | 29.942 | .0000 | .000 |
| 1084-171 | 590.51 | 587.67 | 6110.37 | 321.85 | .091 | .00    | 15916.69 | 9025.80 | .00    | .25 | .3617 | 29.459 | .0000 | .000 |
| AFT(A)   | 584.79 | 558.60 | 6073.73 | 990.37 | .282 | .0000  | 15823.73 | 9026.66 | .00    | .52 | .3607 | 29.460 | .0000 | .000 |
| AFT(B)   | 584.78 | 584.78 | 6111.28 | -.02   | .000 | .0000  | 10413.12 | .34     | .00    | .34 | .3604 | 20.670 | .0000 | .000 |

| SLOT                                    | PO           | P                        | T                  | U              | AP               | DWDT           | AB          | RB         | DELTA        | MSLOT     |
|-----------------------------------------|--------------|--------------------------|--------------------|----------------|------------------|----------------|-------------|------------|--------------|-----------|
| INTERFACE                               | PSIA         | PSIA                     | DEG. R             | FT/SEC         | SQ. IN.          | LB/SEC         | SQ. IN.     | IN/SEC     | TAU          |           |
| LOCATION                                |              |                          |                    |                |                  |                |             |            | IN.          | LB/SEC    |
| FOREWARD                                | 1.1676+02    | 5.9486+02                | 5.9477+02          | 6.1143+03      | 4.3139+01        | 1.6460+04      | 0.0000      | 0.0000     | 0.0000       | 1.2654+03 |
| AFT                                     | 1.1677+02    | 5.9486+02                | 5.9477+02          | 6.1143+03      | 4.3139+01        | 1.6460+04      | 0.0000      | 0.0000     | 0.0000       | 1.2654+03 |
| GAS BUILDUP IN SLOT, DW/DT = -1.9897-04 |              |                          |                    |                |                  |                |             |            |              |           |
| FOREWARD                                | 4.2705+02    | 5.9405+02                | 5.9321+02          | 6.1132+03      | 1.4117+02        | 1.6303+04      | 0.0000      | 0.0000     | 0.0000       | 4.1115+03 |
| AFT                                     | 4.2706+02    | 5.9425+02                | 5.9342+02          | 6.1136+03      | 1.4113+02        | 1.6303+04      | 0.0000      | 0.0000     | 0.0000       | 4.1115+03 |
| GAS BUILDUP IN SLOT, DW/DT = -1.9767-04 |              |                          |                    |                |                  |                |             |            |              |           |
| FOREWARD                                | 7.4634+02    | 5.9259+02                | 5.9022+02          | 6.1111+03      | 2.3625+02        | 1.6383+04      | 0.0000      | 0.0000     | 0.0000       | 6.8466+03 |
| AFT                                     | 7.4635+02    | 5.9314+02                | 5.9077+02          | 6.1119+03      | 2.3601+02        | 1.6383+04      | 0.0000      | 0.0000     | 0.0000       | 6.8466+03 |
| GAS BUILDUP IN SLOT, DW/DT = -1.9717-04 |              |                          |                    |                |                  |                |             |            |              |           |
| WEB BURNOUT                             | INCREMENT    | LOCATION = 989.7810      | SECTOR NO. 1       | TAU = 33.6399  | TAUWDP = 33.6399 | TIME = 89.00   |             |            |              |           |
| PARTIAL                                 | TIME = 89.50 | IS=1 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=2 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=3 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=4 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.104 | ALP=449.61 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=5 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=6 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=7 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=8 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=9 ZCALC( 74)= 989.78  | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=10 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=11 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=12 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=13 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=14 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=15 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=16 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=17 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=18 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=19 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=20 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=21 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=22 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=23 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=24 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=25 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=26 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=27 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=28 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=29 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=30 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=31 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=32 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=33 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=34 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=35 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=36 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=37 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=38 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=39 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=40 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=41 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=42 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=43 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=44 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=45 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=46 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=47 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=48 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=49 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=50 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=51 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=52 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=53 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=54 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=55 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=56 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=57 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=58 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=59 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=60 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=61 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=62 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.43 |           |
| PARTIAL                                 | TIME = 89.50 | IS=63 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.99 | AINCW = 988.99   | AINCW = 988.99 | DELZ=13.918 | ALP=449.58 | ALPHI=445.53 |           |
| PARTIAL                                 | TIME = 89.50 | IS=64 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.70 | AINCW = 988.70   | AINCW = 988.70 | DELZ=12.923 | ALP=449.61 | ALPHI=445.83 |           |
| PARTIAL                                 | TIME = 89.50 | IS=65 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.70 | AINCW = 987.70   | AINCW = 987.70 | DELZ=12.210 | ALP=449.63 | ALPHI=446.05 |           |
| PARTIAL                                 | TIME = 89.50 | IS=66 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 986.99 | AINCW = 986.99   | AINCW = 986.99 | DELZ=12.351 | ALP=449.63 | ALPHI=446.01 |           |
| PARTIAL                                 | TIME = 89.50 | IS=67 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.13 | AINCW = 987.13   | AINCW = 987.13 | DELZ=13.104 | ALP=449.63 | ALPHI=445.78 |           |
| PARTIAL                                 | TIME = 89.50 | IS=68 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 987.89 | AINCW = 987.89   | AINCW = 987.89 | DELZ=13.918 | ALP=449.58 | ALPHI=445.50 |           |
| PARTIAL                                 | TIME = 89.50 | IS=69 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 988.80 | AINCW = 988.80   | AINCW = 988.80 | DELZ=14.017 | ALP=449.58 | ALPHI=445.42 |           |
| PARTIAL                                 | TIME = 89.50 | IS=70 ZCALC( 74)= 989.78 | ZCALC( 73)= 974.78 | AINCW = 989.04 | AINCW = 989.04   | AINCW = 989.04 | DELZ=14.257 | ALP=449.57 | ALPHI=445.4  |           |

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|          |       |       |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|----------|-------|-------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN* | TIME= | 90.00 | IS=8 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 985.20 | AINCHI= | 974.78 | DELZ= | 10.419 | ALP= | 449.68 | ALPHI= | 446.65 |
| *PARTBN* | TIME= | 90.00 | IS=1 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 984.20 | AINCHI= | 974.78 | DELZ= | 9.420  | ALP= | 449.70 | ALPHI= | 446.96 |
| *PARTBN* | TIME= | 90.00 | IS=2 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 983.49 | AINCHI= | 974.78 | DELZ= | 8.705  | ALP= | 449.72 | ALPHI= | 447.19 |
| *PARTBN* | TIME= | 90.00 | IS=3 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 983.63 | AINCHI= | 974.78 | DELZ= | 8.846  | ALP= | 449.72 | ALPHI= | 447.14 |
| *PARTBN* | TIME= | 90.00 | IS=4 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 984.38 | AINCHI= | 974.78 | DELZ= | 9.603  | ALP= | 449.70 | ALPHI= | 446.91 |
| *PARTBN* | TIME= | 90.00 | IS=5 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 985.30 | AINCHI= | 974.78 | DELZ= | 10.517 | ALP= | 449.67 | ALPHI= | 446.62 |
| *PARTBN* | TIME= | 90.00 | IS=6 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 985.54 | AINCHI= | 974.78 | DELZ= | 10.760 | ALP= | 449.67 | ALPHI= | 446.55 |
| *PARTBN* | TIME= | 90.00 | IS=7 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 985.49 | AINCHI= | 974.78 | DELZ= | 10.714 | ALP= | 449.67 | ALPHI= | 446.56 |
| *PARTBN* | TIME= | 90.00 | IS=8 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 985.20 | AINCHI= | 974.78 | DELZ= | 10.419 | ALP= | 449.68 | ALPHI= | 446.65 |

IGNITION TIME, TIME (S) 90.800000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10254404.     | 2305281.8    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10298424.     | 2315177.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 56499.015     | 12701.484    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | .10117100+10  | .22744325+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.52522     | 256.52522    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .10612337+10  | .23857482+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6257574     | 1.6257574    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | .063.4155     | 8958.2977    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 417677.84     | 920822.02    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | HIF                  | 30.322611     | 66.849915    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 833.37086     | 1837.2683    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 253.49615     | 392919.82    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 52.076503     | 3177903.2    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 87861.202     | 193701.66    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1252.3791     | 2761.0232    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597105     | 1.1597105    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.844263     | 28.316754    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.1772     | 5115.4106    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94472885-01  | .94472885-01 |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .40679551+09  | 590.00701    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .44558826+11  | 64627.115    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 5.6336331     | 8732.1489    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .91408638-02  | .35987653    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .87441982     | 34.425977    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .99273223     | 60580.238    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.111100     | 3302061.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3396.0549     | 6112.8989    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 247.86252     | 384187.68    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 51.381805     | 3117203.0    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 238.02242     | 14525019.    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .39990362+09  | 580.01118    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .42285166+11  | 61329.449    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .91356694-02  | .35967203    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .91277693-02  | .35936100    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3394.3337     | 6109.8307    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5840166     | 2455.2306    |
| EXPANSION RATIO                            | EPR                  | 6.7856077     | 6.7856077    |
| PRESSURE RATIO                             | PEPU                 | .23195402-01  | .23195402-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.0000000     | 2.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>REGION | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DN/DT  | RB     | TAU    | RBTO   | TAUTO |
|----------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE           | 590.01 | 590.00 | 6112.90 | 9.17   | .003 | 396.66 | 12518.60 | 202.83  | 199.28 | -3.55  | .3597  | 34.426 | .0000  | .0000 |
| 15.000         | 590.00 | 590.00 | 6112.89 | 15.28  | .004 | 396.92 | 12535.85 | 338.57  | 135.83 | .09    | .3597  | 34.385 | .0000  | .0000 |
| 30.000         | 589.99 | 589.99 | 6112.88 | 21.38  | .006 | 397.19 | 12553.07 | 474.40  | 135.92 | .09    | .3597  | 34.380 | .0000  | .0000 |
| 45.000         | 589.99 | 589.97 | 6112.87 | 27.46  | .008 | 397.46 | 12570.27 | 610.32  | 136.01 | .09    | .3597  | 34.376 | .0000  | .0000 |
| 60.000         | 589.98 | 589.95 | 6112.86 | 33.54  | .010 | 397.72 | 12587.43 | 746.34  | 136.10 | .09    | .3597  | 34.371 | .0000  | .0000 |
| 75.000         | 589.97 | 589.93 | 6112.84 | 39.60  | .011 | 397.99 | 12604.57 | 882.44  | 136.19 | .09    | .3597  | 34.366 | .0000  | .0000 |
| 90.000         | 589.96 | 589.90 | 6112.82 | 45.65  | .013 | 398.26 | 12621.68 | 1018.63 | 136.28 | .09    | .3597  | 34.361 | .0000  | .0000 |
| 105.000        | 589.95 | 589.87 | 6112.80 | 51.70  | .015 | 398.53 | 12638.76 | 1154.91 | 136.37 | .09    | .3596  | 34.356 | .0000  | .0000 |
| 116.761        | 589.93 | 589.85 | 6112.78 | 56.42  | .016 | 398.74 | 12652.13 | 1251.83 | 106.98 | .07    | .3596  | 34.351 | .0000  | .0000 |
| 116.771        | 589.93 | 589.84 | 6112.77 | 57.24  | .016 | 345.96 | 12472.70 | 1261.83 | .00    | .00    | .3596  | 34.352 | .0000  | .0000 |
| 131.771        | 589.92 | 589.81 | 6112.75 | 62.40  | .018 | 374.64 | 12532.01 | 1385.09 | 123.32 | .06    | .3596  | 34.352 | .0000  | .0000 |
| 143.919        | 589.90 | 589.78 | 6112.73 | 67.01  | .019 | 397.87 | 12598.25 | 1492.10 | 107.07 | .06    | .3596  | 34.344 | .0000  | .0000 |
| 158.919        | 589.88 | 589.73 | 6112.69 | 72.84  | .021 | 398.80 | 12649.78 | 1628.35 | 136.34 | .09    | .3596  | 34.339 | .0000  | .0000 |
| 173.919        | 589.85 | 589.68 | 6112.66 | 78.64  | .022 | 399.73 | 12701.08 | 1764.92 | 136.65 | .09    | .3596  | 34.333 | .0000  | .0000 |
| 188.919        | 589.82 | 589.63 | 6112.62 | 84.40  | .024 | 400.66 | 12752.16 | 1901.80 | 136.97 | .09    | .3596  | 34.327 | .0000  | .0000 |
| 203.919        | 589.80 | 589.57 | 6112.58 | 90.14  | .026 | 401.59 | 12803.02 | 2038.99 | 137.28 | .09    | .3596  | 34.321 | .0000  | .0000 |
| 218.919        | 589.76 | 589.51 | 6112.54 | 95.85  | .027 | 402.51 | 12853.66 | 2176.50 | 137.59 | .09    | .3596  | 34.315 | .0000  | .0000 |
| 233.919        | 589.73 | 589.45 | 6112.50 | 101.53 | .029 | 403.44 | 12904.07 | 2314.31 | 137.90 | .08    | .3596  | 34.308 | .0000  | .0000 |
| 248.919        | 589.70 | 589.38 | 6112.45 | 107.19 | .030 | 404.37 | 12954.26 | 2452.45 | 138.22 | .08    | .3595  | 34.302 | .0000  | .0000 |
| 263.919        | 589.66 | 589.31 | 6112.40 | 112.81 | .032 | 405.30 | 13004.23 | 2590.89 | 138.53 | .08    | .3595  | 34.296 | .0000  | .0000 |
| 278.919        | 589.62 | 589.23 | 6112.35 | 118.42 | .034 | 406.23 | 13053.97 | 2729.64 | 138.84 | .08    | .3595  | 34.289 | .0000  | .0000 |
| 293.919        | 589.58 | 589.16 | 6112.30 | 123.99 | .035 | 407.16 | 13103.49 | 2868.71 | 139.15 | .08    | .3595  | 34.282 | .0000  | .0000 |
| 308.919        | 589.53 | 589.07 | 6112.24 | 129.55 | .037 | 408.09 | 13152.79 | 3008.08 | 139.46 | .08    | .3595  | 34.276 | .0000  | .0000 |
| 323.919        | 589.49 | 588.99 | 6112.19 | 135.08 | .038 | 409.02 | 13201.86 | 3147.77 | 139.77 | .08    | .3594  | 34.269 | .0000  | .0000 |
| 338.919        | 589.44 | 588.90 | 6112.13 | 140.59 | .040 | 409.95 | 13250.72 | 3287.76 | 140.08 | .08    | .3594  | 34.262 | .0000  | .0000 |
| 353.919        | 589.39 | 588.81 | 6112.07 | 146.07 | .041 | 410.87 | 13299.34 | 3428.07 | 140.39 | .08    | .3594  | 34.255 | .0000  | .0000 |
| 368.919        | 589.34 | 588.71 | 6112.00 | 151.53 | .043 | 411.80 | 13347.75 | 3568.68 | 140.70 | .08    | .3594  | 34.248 | .0000  | .0000 |
| 383.919        | 589.29 | 588.61 | 6111.94 | 156.98 | .044 | 412.73 | 13395.93 | 3709.60 | 141.01 | .08    | .3594  | 34.240 | .0000  | .0000 |
| 398.919        | 589.23 | 588.51 | 6111.87 | 162.40 | .046 | 413.66 | 13443.89 | 3850.83 | 141.31 | .08    | .3593  | 34.233 | .0000  | .0000 |
| 403.049        | 589.21 | 588.48 | 6111.85 | 163.89 | .046 | 413.92 | 13457.05 | 3889.76 | 38.95  | .02    | .3593  | 34.226 | .0000  | .0000 |
| 418.048        | 589.16 | 588.37 | 6111.77 | 170.01 | .048 | 412.05 | 13445.00 | 4030.91 | 141.22 | .08    | .3593  | 34.223 | .0000  | .0000 |
| 427.051        | 589.13 | 588.30 | 6111.72 | 173.68 | .049 | 410.93 | 13437.96 | 4115.31 | 84.45  | .05    | .3593  | 34.217 | .0000  | .0000 |
| 427.061        | 589.12 | 588.49 | 6112.01 | 150.68 | .043 | 47.95  | 15485.58 | 4115.31 | .00    | .00    | .3593  | 34.243 | .0000  | .0000 |
| 442.061        | 589.22 | 588.48 | 6111.85 | 163.86 | .046 | 136.55 | 14292.82 | 4130.69 | 15.15  | .24    | .3593  | 34.243 | .0000  | .0000 |
| 457.061        | 589.35 | 588.43 | 6111.59 | 182.94 | .052 | 321.04 | 13645.13 | 4209.01 | 78.25  | .07    | .3593  | 34.215 | .0000  | .0000 |
| 463.204        | 589.41 | 588.38 | 6111.44 | 192.93 | .055 | 396.60 | 12518.01 | 4259.25 | 50.26  | .02    | .3593  | 34.174 | .0000  | .0000 |
| 478.204        | 589.33 | 588.25 | 6111.36 | 198.51 | .056 | 397.17 | 12556.35 | 4394.89 | 135.73 | .09    | .3593  | 34.153 | .0000  | .0000 |
| 493.204        | 589.26 | 588.12 | 6111.27 | 204.07 | .058 | 397.75 | 12594.24 | 4530.73 | 135.92 | .09    | .3593  | 34.144 | .0000  | .0000 |
| 508.204        | 589.19 | 587.98 | 6111.18 | 209.62 | .059 | 398.33 | 12631.98 | 4666.75 | 136.11 | .09    | .3593  | 34.134 | .0000  | .0000 |
| 523.204        | 589.11 | 587.84 | 6111.09 | 215.15 | .061 | 398.90 | 12669.56 | 4802.95 | 136.29 | .08    | .3592  | 34.124 | .0000  | .0000 |
| 538.204        | 589.03 | 587.70 | 6110.99 | 220.65 | .063 | 399.48 | 12706.99 | 4939.35 | 136.48 | .08    | .3592  | 34.115 | .0000  | .0000 |
| 553.204        | 588.95 | 587.55 | 6110.90 | 226.15 | .064 | 400.06 | 12744.26 | 5075.93 | 136.66 | .08    | .3592  | 34.105 | .0000  | .0000 |
| 568.204        | 588.87 | 587.40 | 6110.80 | 231.62 | .066 | 400.63 | 12781.38 | 5212.69 | 136.85 | .08    | .3591  | 34.095 | .0000  | .0000 |
| 583.204        | 588.78 | 587.24 | 6110.70 | 237.28 | .067 | 401.21 | 12818.34 | 5349.64 | 137.03 | .08    | .3591  | 34.084 | .0000  | .0000 |
| 598.204        | 588.69 | 587.08 | 6110.60 | 242.52 | .069 | 401.79 | 12855.15 | 5486.77 | 137.22 | .08    | .3591  | 34.074 | .0000  | .0000 |
| 613.204        | 588.60 | 586.92 | 6110.49 | 247.95 | .070 | 402.36 | 12891.80 | 5624.38 | 137.40 | .08    | .3590  | 34.064 | .0000  | .0000 |

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 628.204  | 588.51 | 586.76 | 6110.39 | 253.36 | .072 | 402.94 | 12928.30 | 5761.58 | 137.58 | .08 | .3590 | 34.053 | .0000 | .000  |
| 643.204  | 588.42 | 586.59 | 6110.28 | 258.76 | .073 | 403.52 | 12964.65 | 5899.26 | 137.76 | .08 | .3590 | 34.043 | .0000 | .000  |
| 658.204  | 588.32 | 586.42 | 6110.17 | 264.14 | .075 | 404.10 | 13000.04 | 6037.13 | 137.95 | .08 | .3589 | 34.032 | .0000 | .000  |
| 673.204  | 588.23 | 586.24 | 6110.05 | 269.51 | .076 | 404.67 | 13036.88 | 6175.17 | 138.13 | .08 | .3589 | 34.022 | .0000 | .000  |
| 688.204  | 588.13 | 586.06 | 6109.94 | 274.86 | .078 | 405.25 | 13072.76 | 6313.40 | 138.31 | .08 | .3589 | 34.011 | .0000 | .000  |
| 703.204  | 588.03 | 585.88 | 6109.82 | 280.21 | .079 | 405.83 | 13108.49 | 6451.81 | 138.49 | .08 | .3588 | 34.001 | .0000 | .000  |
| 718.204  | 587.92 | 585.69 | 6109.71 | 285.54 | .081 | 406.40 | 13144.06 | 6590.40 | 138.67 | .08 | .3588 | 33.990 | .0000 | .000  |
| 726.191  | 587.87 | 585.59 | 6109.64 | 288.37 | .082 | 406.71 | 13162.94 | 6664.27 | 73.91  | .04 | .3587 | 33.979 | .0000 | .000  |
| 741.191  | 587.73 | 585.40 | 6109.57 | 291.63 | .083 | 408.69 | 13291.78 | 6803.37 | 139.18 | .08 | .3587 | 33.973 | .0000 | .000  |
| 746.336  | 587.68 | 585.34 | 6109.54 | 292.74 | .083 | 409.37 | 13335.60 | 6851.24 | 47.89  | .03 | .3586 | 33.968 | .0000 | .000  |
| 746.346  | 587.64 | 585.85 | 6110.34 | 255.72 | .072 | 86.83  | 15254.92 | 6851.24 | .00    | .00 | .3587 | 34.017 | .0000 | .000  |
| 761.346  | 587.78 | 585.80 | 6110.07 | 268.59 | .076 | 185.99 | 14623.77 | 6897.97 | 46.57  | .16 | .3587 | 34.018 | .0000 | .000  |
| 776.346  | 587.92 | 585.71 | 6109.74 | 284.05 | .081 | 285.15 | 13990.37 | 6978.47 | 80.43  | .07 | .3587 | 33.993 | .0000 | .000  |
| 791.346  | 588.07 | 585.57 | 6109.31 | 302.50 | .086 | 384.31 | 13354.69 | 7092.73 | 114.28 | .01 | .3587 | 33.963 | .0000 | .000  |
| 794.831  | 588.10 | 585.52 | 6109.20 | 307.26 | .087 | 407.34 | 13206.68 | 7124.11 | 31.39  | .02 | .3587 | 33.927 | .0000 | .000  |
| 809.831  | 587.98 | 585.32 | 6109.09 | 311.84 | .088 | 408.33 | 13271.08 | 7263.25 | 139.22 | .08 | .3587 | 33.922 | .0000 | .000  |
| 824.831  | 587.85 | 585.11 | 6108.98 | 316.41 | .090 | 409.32 | 13335.00 | 7402.72 | 139.54 | .08 | .3586 | 33.912 | .0000 | .000  |
| 839.831  | 587.72 | 584.90 | 6108.86 | 320.97 | .091 | 410.31 | 13398.43 | 7542.50 | 139.86 | .08 | .3586 | 33.902 | .0000 | .000  |
| 854.781  | 587.59 | 584.70 | 6108.75 | 325.50 | .092 | 411.29 | 13461.17 | 7682.13 | 139.71 | .08 | .3585 | 33.892 | .0000 | .000  |
| 869.781  | 587.37 | 584.48 | 6108.75 | 325.43 | .092 | 415.66 | 13716.02 | 7823.14 | 141.06 | .06 | .3584 | 33.881 | .0000 | .000  |
| 884.781  | 587.16 | 584.27 | 6108.74 | 325.64 | .092 | 420.13 | 13962.05 | 7965.65 | 142.54 | .02 | .3583 | 33.887 | .0000 | .000  |
| 899.781  | 586.96 | 584.06 | 6108.73 | 326.11 | .092 | 424.59 | 14199.25 | 8109.71 | 144.04 | .01 | .3583 | 33.891 | .0000 | .000  |
| 914.781  | 586.76 | 583.85 | 6108.71 | 326.83 | .093 | 429.04 | 14427.63 | 8255.30 | 145.55 | .04 | .3583 | 33.893 | .0000 | .000  |
| 929.781  | 586.57 | 583.64 | 6108.69 | 327.78 | .093 | 433.48 | 14647.18 | 8402.49 | 147.11 | .08 | .3585 | 33.895 | .0000 | .000  |
| 944.781  | 586.38 | 583.43 | 6108.66 | 328.97 | .093 | 437.93 | 14857.92 | 8551.33 | 148.73 | .11 | .3588 | 33.896 | .0000 | .000  |
| 959.781  | 586.19 | 583.22 | 6108.62 | 330.39 | .094 | 442.37 | 15059.83 | 8701.90 | 150.43 | .14 | .3594 | 33.898 | .0000 | .000  |
| 974.781  | 586.01 | 583.01 | 6108.58 | 332.04 | .094 | 446.82 | 15252.91 | 8854.29 | 152.22 | .17 | .3601 | 33.901 | .0000 | .000  |
| 989.781  | 585.90 | 582.87 | 6108.55 | 333.25 | .094 | 449.69 | 15375.28 | 8955.69 | 101.17 | .23 | .3607 | 33.640 | .0000 | .000  |
| 1004.781 | 585.81 | 582.87 | 6108.68 | 328.20 | .093 | .00    | 15612.61 | 8956.00 | .00    | .31 | .3607 | 32.871 | .0000 | .000  |
| 1019.781 | 585.74 | 582.87 | 6108.77 | 324.75 | .092 | .00    | 15779.23 | 8956.24 | .00    | .24 | .3607 | 32.101 | .0000 | .000  |
| 1034.781 | 585.69 | 582.87 | 6108.85 | 321.55 | .091 | .00    | 15937.02 | 8956.50 | .00    | .26 | .3607 | 31.332 | .0000 | .000  |
| 1040.791 | 585.67 | 582.87 | 6108.88 | 320.33 | .091 | .00    | 15997.77 | 8956.62 | .00    | .11 | .3607 | 31.024 | .0000 | .000  |
| 1055.791 | 585.68 | 582.87 | 6108.87 | 320.90 | .091 | .00    | 15969.84 | 8956.90 | .00    | .28 | .3607 | 30.483 | .0000 | .000  |
| 1070.791 | 585.69 | 582.87 | 6108.85 | 321.47 | .091 | .00    | 15941.80 | 8957.18 | .00    | .28 | .3607 | 29.942 | .0000 | .000  |
| 1084.171 | 585.70 | 582.87 | 6108.84 | 321.99 | .091 | .00    | 15916.69 | 8957.44 | .00    | .25 | .3607 | 29.459 | .0000 | .000  |
| AFY(A)   | 580.01 | 554.00 | 6072.21 | 990.86 | .282 | .....  | 15823.73 | 8958.30 | .00    | .52 | .3597 | 29.460 | ....  | ..... |
| AFY(B)   | 580.00 | 580.00 | 6109.80 | -.02   | .000 | .....  | 10413.12 | .34     | .00    | .34 | .3594 | 20.670 | ....  | ..... |

|          |       |       |      |             |        |             |        |        |        |         |        |       |       |            |              |
|----------|-------|-------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|-------|------------|--------------|
| •PARTBN• | TIME= | 90.50 | IS=1 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 980.70 | AINCHI= | 974.78 | DELZ= | 5.920 | ALP=449.80 | ALPHI=448.10 |
| •PARTBN• | TIME= | 90.50 | IS=2 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 979.98 | AINCHI= | 974.78 | DELZ= | 5.201 | ALP=449.81 | ALPHI=448.33 |
| •PARTBN• | TIME= | 90.50 | IS=3 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 980.12 | AINCHI= | 974.78 | DELZ= | 5.344 | ALP=449.81 | ALPHI=448.28 |
| •PARTBN• | TIME= | 90.50 | IS=4 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 980.89 | AINCHI= | 974.78 | DELZ= | 6.104 | ALP=449.79 | ALPHI=448.04 |
| •PARTBN• | TIME= | 90.50 | IS=5 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 981.81 | AINCHI= | 974.78 | DELZ= | 7.024 | ALP=449.77 | ALPHI=447.75 |
| •PARTBN• | TIME= | 90.50 | IS=6 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 982.05 | AINCHI= | 974.78 | DELZ= | 7.267 | ALP=449.76 | ALPHI=447.67 |
| •PARTBN• | TIME= | 90.50 | IS=7 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 982.00 | AINCHI= | 974.78 | DELZ= | 7.221 | ALP=449.76 | ALPHI=447.69 |
| •PARTBN• | TIME= | 90.50 | IS=8 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 981.71 | AINCHI= | 974.78 | DELZ= | 6.924 | ALP=449.77 | ALPHI=447.78 |
| •PARTBN• | TIME= | 90.50 | IS=1 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 980.70 | AINCHI= | 974.78 | DELZ= | 5.920 | ALP=449.80 | ALPHI=448.10 |
| •PARTBN• | TIME= | 90.50 | IS=2 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 979.98 | AINCHI= | 974.78 | DELZ= | 5.201 | ALP=449.81 | ALPHI=448.33 |
| •PARTBN• | TIME= | 90.50 | IS=3 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 980.12 | AINCHI= | 974.78 | DELZ= | 5.344 | ALP=449.81 | ALPHI=448.28 |
| •PARTBN• | TIME= | 90.50 | IS=4 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 980.89 | AINCHI= | 974.78 | DELZ= | 6.104 | ALP=449.79 | ALPHI=448.04 |
| •PARTBN• | TIME= | 90.50 | IS=5 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 981.81 | AINCHI= | 974.78 | DELZ= | 7.024 | ALP=449.77 | ALPHI=447.75 |
| •PARTBN• | TIME= | 90.50 | IS=6 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 982.05 | AINCHI= | 974.78 | DELZ= | 7.267 | ALP=449.76 | ALPHI=447.67 |
| •PARTBN• | TIME= | 90.50 | IS=7 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 982.00 | AINCHI= | 974.78 | DELZ= | 7.221 | ALP=449.76 | ALPHI=447.69 |
| •PARTBN• | TIME= | 90.50 | IS=8 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 981.71 | AINCHI= | 974.78 | DELZ= | 6.924 | ALP=449.77 | ALPHI=447.78 |
| •PARTBN• | TIME= | 91.00 | IS=1 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 977.20 | AINCHI= | 974.78 | DELZ= | 2.422 | ALP=449.89 | ALPHI=449.23 |
| •PARTBN• | TIME= | 91.00 | IS=2 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 976.48 | AINCHI= | 974.78 | DELZ= | 1.699 | ALP=449.91 | ALPHI=449.46 |
| •PARTBN• | TIME= | 91.00 | IS=3 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 976.62 | AINCHI= | 974.78 | DELZ= | 1.842 | ALP=449.90 | ALPHI=449.42 |
| •PARTBN• | TIME= | 91.00 | IS=4 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 977.39 | AINCHI= | 974.78 | DELZ= | 2.608 | ALP=449.88 | ALPHI=449.17 |
| •PARTBN• | TIME= | 91.00 | IS=5 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.32 | AINCHI= | 974.78 | DELZ= | 3.534 | ALP=449.86 | ALPHI=448.88 |
| •PARTBN• | TIME= | 91.00 | IS=6 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.56 | AINCHI= | 974.78 | DELZ= | 3.779 | ALP=449.85 | ALPHI=448.80 |
| •PARTBN• | TIME= | 91.00 | IS=7 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.51 | AINCHI= | 974.78 | DELZ= | 3.732 | ALP=449.85 | ALPHI=448.81 |
| •PARTBN• | TIME= | 91.00 | IS=8 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.21 | AINCHI= | 974.78 | DELZ= | 3.433 | ALP=449.86 | ALPHI=448.91 |
| •PARTBN• | TIME= | 91.00 | IS=1 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 977.20 | AINCHI= | 974.78 | DELZ= | 2.422 | ALP=449.89 | ALPHI=449.23 |
| •PARTBN• | TIME= | 91.00 | IS=2 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 976.48 | AINCHI= | 974.78 | DELZ= | 1.699 | ALP=449.91 | ALPHI=449.46 |
| •PARTBN• | TIME= | 91.00 | IS=3 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 976.62 | AINCHI= | 974.78 | DELZ= | 1.842 | ALP=449.90 | ALPHI=449.42 |
| •PARTBN• | TIME= | 91.00 | IS=4 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 977.39 | AINCHI= | 974.78 | DELZ= | 2.608 | ALP=449.88 | ALPHI=449.17 |
| •PARTBN• | TIME= | 91.00 | IS=5 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.32 | AINCHI= | 974.78 | DELZ= | 3.534 | ALP=449.86 | ALPHI=448.88 |
| •PARTBN• | TIME= | 91.00 | IS=6 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.56 | AINCHI= | 974.78 | DELZ= | 3.779 | ALP=449.85 | ALPHI=448.80 |
| •PARTBN• | TIME= | 91.00 | IS=7 | ZCALC( 74)= | 989.78 | ZCALC( 73)= | 974.78 | AINCW= | 978.51 | AINCHI= | 974.78 | DELZ= | 3.732 | ALP=449.85 | ALPHI=448.81 |



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\*PARTNO TIME= 91.00 IS=8 ZCALC( 74)= 989.78 ZCALC( 73)= 974.78 AINCH= 978.21 AINCH1= 974.78 DELZ= 3.433 ALPH1=448.91



IGNITION TIME, TIME (S) 91.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10176057.     | 2287848.4    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10217653.     | 2297019.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 57272.293     | 12875.324    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | .10219338+10  | .22973985+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.48091     | 256.48091    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .10714919+10  | .24088096+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6258778     | 1.6258778    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 4031.5947     | 8808.1449    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 421725.40     | 929745.37    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 30.737624     | 67.764862    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 802.73622     | 1769.7304    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 252.22991     | 390957.15    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 49.812583     | 3039750.3    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 83815.750     | 184782.10    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1243.6327     | 2741.7408    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597057     | 1.1597057    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.843063     | 28.314107    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1559.0885     | 5115.1198    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94790565-01  | .94790565-01 |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .40331990+09  | 584.96606    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .44963890+11  | 65214.609    |
| BURN AREA (M**2,IN**2)                     | AMH                  | 5.4641904     | 8469.5121    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .91133798-02  | .35879448    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .88355385     | 34.785585    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .94212145     | 57491.778    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.161711     | 3305150.4    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3395.1869     | 6111.3364    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 246.76572     | 382487.64    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 481868496     | 2982138.6    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 238.39062     | 14547488.    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .39653315+09  | 575.12271    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .42683390+11  | 61907.023    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .93086566-02  | .35863853    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .91007713-02  | .35829809    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19602722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3393.4919     | 6108.2853    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5848340     | 2456.4976    |
| EXPANSION RATIO                            | EPR                  | 6.7821079     | 6.7821079    |
| PRESSURE RATIO                             | PEPO                 | .23211404-01  | .23211404-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 2.0000000     | 2.0000000    |

INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGION | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | M    | LP<br>INCHES | AP<br>SQ. IN. | WDOT<br>LB/SEC | DWDT<br>LB/SEC | DW/DT<br>IN/SEC | TAU<br>IN. | RBTO<br>IN/SEC | TAUTO<br>IN. |
|----------------------------|------------|-----------|-------------|-------------|------|--------------|---------------|----------------|----------------|-----------------|------------|----------------|--------------|
| FORE                       | 584.97     | 584.96    | 6111.34     | 8.86        | .003 | 398.92       | 12661.56      | 196.43         | 192.70         | -3.73           | .3586      | 34.786         | .0000        |
| 15.000                     | 584.96     | 584.96    | 6111.33     | 14.96       | .004 | 399.19       | 12678.91      | 332.55         | 136.19         | .07             | .3586      | 34.744         | .0000        |
| 30.000                     | 584.96     | 584.95    | 6111.32     | 21.06       | .006 | 399.45       | 12696.23      | 468.76         | 136.28         | .07             | .3586      | 34.740         | .0000        |
| 45.000                     | 584.95     | 584.93    | 6111.31     | 27.15       | .008 | 399.72       | 12713.52      | 605.06         | 136.37         | .07             | .3586      | 34.735         | .0000        |
| 60.000                     | 584.94     | 584.91    | 6111.30     | 33.22       | .009 | 399.99       | 12730.78      | 741.45         | 136.46         | .07             | .3586      | 34.731         | .0000        |
| 75.000                     | 584.93     | 584.89    | 6111.28     | 39.29       | .011 | 403.25       | 12748.01      | 877.93         | 136.55         | .07             | .3586      | 34.726         | .0000        |
| 90.000                     | 584.92     | 584.87    | 6111.26     | 45.34       | .013 | 400.52       | 12765.21      | 1014.49        | 136.64         | .07             | .3586      | 34.721         | .0000        |
| 105.000                    | 584.91     | 584.84    | 6111.24     | 51.38       | .015 | 400.78       | 12782.38      | 1151.15        | 136.73         | .07             | .3586      | 34.715         | .0000        |
| 116.761                    | 584.89     | 584.81    | 6111.22     | 56.11       | .016 | 400.99       | 12795.82      | 1258.36        | 107.27         | .06             | .3586      | 34.710         | .0000        |
| 116.771                    | 584.89     | 584.81    | 6111.21     | 56.99       | .016 | 346.73       | 12597.16      | 1258.36        | .00            | .00             | .3585      | 34.711         | .0000        |
| 131.771                    | 584.88     | 584.77    | 6111.19     | 62.19       | .018 | 376.24       | 12676.92      | 1381.67        | 123.36         | .04             | .3585      | 34.711         | .0000        |
| 143.919                    | 584.86     | 584.74    | 6111.17     | 66.68       | .019 | 400.13       | 12741.63      | 1488.90        | 107.28         | .05             | .3585      | 34.704         | .0000        |
| 158.919                    | 584.84     | 584.69    | 6111.13     | 72.50       | .021 | 401.36       | 12793.52      | 1625.53        | 136.70         | .07             | .3585      | 34.698         | .0000        |
| 173.919                    | 584.81     | 584.65    | 6111.10     | 78.30       | .022 | 401.59       | 12845.17      | 1762.47        | 137.01         | .07             | .3585      | 34.692         | .0000        |
| 188.919                    | 584.79     | 584.59    | 6111.06     | 84.37       | .024 | 402.92       | 12896.60      | 1899.72        | 137.32         | .07             | .3585      | 34.686         | .0000        |
| 203.919                    | 584.76     | 584.54    | 6111.02     | 89.81       | .025 | 403.85       | 12947.81      | 2037.28        | 137.64         | .07             | .3585      | 34.680         | .0000        |
| 218.919                    | 584.73     | 584.48    | 6110.98     | 95.52       | .027 | 404.78       | 12998.78      | 2175.16        | 137.95         | .07             | .3585      | 34.674         | .0000        |
| 233.919                    | 584.69     | 584.42    | 6110.94     | 101.20      | .029 | 405.70       | 13049.53      | 2313.35        | 138.26         | .07             | .3585      | 34.668         | .0000        |
| 248.919                    | 584.66     | 584.35    | 6110.89     | 106.86      | .030 | 406.63       | 13100.06      | 2451.85        | 138.57         | .07             | .3584      | 34.661         | .0000        |
| 263.919                    | 584.62     | 584.28    | 6110.84     | 112.49      | .032 | 407.56       | 13150.35      | 2590.65        | 138.88         | .07             | .3584      | 34.655         | .0000        |
| 278.919                    | 584.58     | 584.20    | 6110.79     | 118.10      | .033 | 408.49       | 13200.42      | 2729.77        | 139.19         | .07             | .3584      | 34.648         | .0000        |
| 293.919                    | 584.54     | 584.13    | 6110.74     | 123.68      | .035 | 409.42       | 13250.27      | 2869.20        | 139.50         | .07             | .3584      | 34.642         | .0000        |
| 308.919                    | 584.50     | 584.04    | 6110.68     | 129.23      | .037 | 410.35       | 13299.88      | 3008.94        | 139.81         | .07             | .3584      | 34.635         | .0000        |
| 323.919                    | 584.45     | 583.96    | 6110.63     | 134.77      | .038 | 411.27       | 13349.27      | 3148.99        | 140.12         | .07             | .3584      | 34.628         | .0000        |
| 338.919                    | 584.41     | 583.87    | 6110.57     | 140.28      | .040 | 412.20       | 13398.44      | 3289.34        | 140.42         | .07             | .3583      | 34.621         | .0000        |
| 353.919                    | 584.36     | 583.78    | 6110.51     | 145.77      | .041 | 413.13       | 13447.37      | 3430.00        | 140.73         | .07             | .3583      | 34.614         | .0000        |
| 368.919                    | 584.31     | 583.68    | 6110.44     | 151.23      | .043 | 414.06       | 13496.88      | 3570.98        | 141.04         | .07             | .3583      | 34.607         | .0000        |
| 383.919                    | 584.25     | 583.59    | 6110.38     | 156.68      | .044 | 414.99       | 13544.56      | 3712.25        | 141.35         | .07             | .3583      | 34.599         | .0000        |
| 398.919                    | 584.20     | 583.48    | 6110.31     | 162.10      | .046 | 415.92       | 13592.82      | 3853.84        | 141.65         | .07             | .3582      | 34.592         | .0000        |
| 403.048                    | 584.18     | 583.46    | 6110.29     | 163.59      | .046 | 416.17       | 13620.06      | 3892.86        | 39.05          | .02             | .3582      | 34.585         | .0000        |
| 418.048                    | 584.13     | 583.35    | 6110.21     | 169.72      | .048 | 414.31       | 13593.33      | 4034.36        | 141.56         | .07             | .3582      | 34.582         | .0000        |
| 427.051                    | 584.10     | 583.28    | 6110.16     | 173.40      | .049 | 413.19       | 13585.89      | 4118.97        | 84.66          | .04             | .3582      | 34.576         | .0000        |
| 427.061                    | 584.09     | 583.46    | 6110.43     | 152.29      | .043 | 764.59       | 15465.36      | 4118.98        | .00            | .00             | .3592      | 34.602         | .0000        |
| 442.061                    | 584.19     | 583.45    | 6110.28     | 164.70      | .047 | 127.75       | 14330.12      | 4130.00        | 10.77          | .26             | .3582      | 34.602         | .0000        |
| 457.061                    | 584.31     | 583.40    | 6110.03     | 182.78      | .052 | 320.09       | 13158.99      | 4206.44        | 76.35          | .09             | .3583      | 34.574         | .0000        |
| 463.204                    | 584.36     | 583.35    | 6109.89     | 192.25      | .054 | 398.86       | 12661.12      | 4256.62        | 50.23          | .01             | .3582      | 34.533         | .0000        |
| 478.204                    | 584.29     | 583.22    | 6109.81     | 197.84      | .056 | 399.43       | 12697.38      | 4392.64        | 136.09         | .07             | .3582      | 34.512         | .0000        |
| 493.204                    | 584.22     | 583.09    | 6109.72     | 203.40      | .058 | 400.01       | 12737.48      | 4528.85        | 136.28         | .07             | .3582      | 34.503         | .0000        |
| 508.204                    | 584.14     | 582.96    | 6109.63     | 208.95      | .059 | 400.59       | 12775.43      | 4665.25        | 136.47         | .07             | .3582      | 34.493         | .0000        |
| 523.204                    | 584.07     | 582.82    | 6109.54     | 214.48      | .061 | 401.16       | 12813.22      | 4801.83        | 136.65         | .07             | .3581      | 34.483         | .0000        |
| 538.204                    | 583.99     | 582.67    | 6109.44     | 220.00      | .062 | 401.74       | 12850.85      | 4938.59        | 136.84         | .07             | .3581      | 34.473         | .0000        |
| 553.204                    | 583.91     | 582.53    | 6109.35     | 225.44      | .064 | 402.32       | 12888.32      | 5075.54        | 137.02         | .07             | .3581      | 34.463         | .0000        |
| 568.204                    | 583.83     | 582.38    | 6109.25     | 230.97      | .065 | 402.89       | 12925.64      | 5212.67        | 137.20         | .07             | .3580      | 34.453         | .0000        |
| 583.204                    | 583.74     | 582.22    | 6109.15     | 236.44      | .067 | 403.47       | 12962.80      | 5349.99        | 137.39         | .07             | .3580      | 34.443         | .0000        |
| 598.204                    | 583.66     | 582.07    | 6109.05     | 241.88      | .069 | 404.04       | 12999.83      | 5487.49        | 137.57         | .07             | .3580      | 34.433         | .0000        |
| 613.204                    | 583.57     | 581.91    | 6108.94     | 247.32      | .070 | 404.62       | 13036.65      | 5625.17        | 137.75         | .07             | .3579      | 34.423         | .0000        |

DATE 071076

|          |        |        |         |        |      |        |          |         |        |     |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|------|
| 628.204  | 583.48 | 581.74 | 6108.84 | 252.73 | .072 | 405.20 | 13073.33 | 5763.04 | 137.93 | .07 | .3579 | 34.412 | .0000 | .000 |
| 643.204  | 583.38 | 581.58 | 6108.73 | 258.13 | .073 | 405.77 | 13109.86 | 5901.08 | 138.12 | .07 | .3579 | 34.402 | .0000 | .000 |
| 658.204  | 583.29 | 581.41 | 6108.62 | 263.52 | .075 | 406.35 | 13146.24 | 6039.31 | 138.30 | .07 | .3579 | 34.391 | .0000 | .000 |
| 673.204  | 583.19 | 581.23 | 6108.51 | 269.90 | .076 | 406.93 | 13182.45 | 6177.72 | 138.48 | .07 | .3578 | 34.380 | .0000 | .000 |
| 688.204  | 583.10 | 581.06 | 6108.39 | 274.26 | .078 | 407.50 | 13218.51 | 6316.31 | 138.66 | .07 | .3577 | 34.370 | .0000 | .000 |
| 703.204  | 583.00 | 580.88 | 6108.28 | 279.61 | .079 | 408.08 | 13254.41 | 6455.38 | 138.84 | .07 | .3577 | 34.359 | .0000 | .000 |
| 718.204  | 582.89 | 580.69 | 6108.16 | 284.94 | .081 | 408.65 | 13290.16 | 6594.03 | 139.02 | .07 | .3577 | 34.349 | .0000 | .000 |
| 733.191  | 582.84 | 580.59 | 6108.09 | 289.78 | .082 | 408.94 | 13339.12 | 6688.09 | 139.09 | .04 | .3576 | 34.338 | .0000 | .000 |
| 748.191  | 582.70 | 580.40 | 6108.02 | 291.05 | .083 | 409.94 | 13438.66 | 6807.55 | 139.53 | .07 | .3576 | 34.332 | .0000 | .000 |
| 763.336  | 582.65 | 580.34 | 6107.99 | 292.18 | .083 | 411.62 | 13482.71 | 6855.54 | 140.01 | .02 | .3575 | 34.326 | .0000 | .000 |
| 778.346  | 582.62 | 580.42 | 6108.74 | 257.57 | .073 | 72.26  | 15283.44 | 6855.54 | .00    | .00 | .3576 | 34.375 | .0000 | .000 |
| 793.346  | 582.75 | 580.78 | 6108.49 | 269.67 | .076 | 176.63 | 14688.62 | 6898.08 | 42.36  | .19 | .3576 | 34.376 | .0000 | .000 |
| 808.346  | 582.88 | 580.91 | 6108.17 | 284.31 | .081 | 280.99 | 14091.66 | 6976.05 | 77.88  | .09 | .3576 | 34.351 | .0000 | .000 |
| 823.346  | 583.01 | 580.54 | 6107.77 | 301.81 | .086 | 385.35 | 13492.57 | 7089.45 | 113.40 | .00 | .3576 | 34.322 | .0000 | .000 |
| 838.346  | 583.04 | 580.50 | 6107.66 | 306.33 | .087 | 409.60 | 13353.08 | 7120.87 | 114.43 | .01 | .3576 | 34.285 | .0000 | .000 |
| 853.346  | 582.92 | 580.30 | 6107.55 | 310.93 | .088 | 410.58 | 13417.83 | 7260.37 | 139.56 | .07 | .3576 | 34.280 | .0000 | .000 |
| 868.346  | 582.79 | 580.10 | 6107.44 | 315.51 | .089 | 411.57 | 13482.09 | 7400.19 | 139.89 | .07 | .3575 | 34.270 | .0000 | .000 |
| 883.346  | 582.66 | 579.89 | 6107.32 | 320.08 | .091 | 412.56 | 13545.85 | 7540.32 | 140.20 | .06 | .3575 | 34.260 | .0000 | .000 |
| 898.346  | 582.54 | 579.68 | 6107.21 | 324.62 | .092 | 413.54 | 13608.91 | 7680.31 | 140.05 | .06 | .3574 | 34.250 | .0000 | .000 |
| 913.346  | 582.33 | 579.47 | 6107.20 | 324.98 | .092 | 417.91 | 13849.27 | 7821.66 | 141.40 | .05 | .3573 | 34.240 | .0000 | .000 |
| 928.346  | 582.13 | 579.26 | 6107.18 | 325.58 | .092 | 422.38 | 14081.26 | 7964.52 | 142.87 | .01 | .3573 | 34.245 | .0000 | .000 |
| 943.346  | 581.93 | 579.05 | 6107.16 | 326.41 | .093 | 426.84 | 14304.88 | 8108.92 | 144.38 | .02 | .3573 | 34.249 | .0000 | .000 |
| 958.346  | 581.74 | 578.84 | 6107.14 | 327.48 | .093 | 431.29 | 14520.12 | 8254.89 | 145.91 | .06 | .3573 | 34.251 | .0000 | .000 |
| 973.346  | 581.56 | 578.63 | 6107.10 | 328.77 | .093 | 435.73 | 14726.99 | 8402.46 | 147.48 | .09 | .3576 | 34.253 | .0000 | .000 |
| 988.346  | 581.37 | 578.42 | 6107.06 | 330.28 | .094 | 440.18 | 14925.53 | 8551.70 | 149.13 | .12 | .3580 | 34.255 | .0000 | .000 |
| 1003.346 | 581.19 | 578.22 | 6107.02 | 332.00 | .094 | 444.63 | 15115.63 | 8702.72 | 150.87 | .15 | .3586 | 34.258 | .0000 | .000 |
| 1018.346 | 581.02 | 578.00 | 6106.97 | 333.94 | .095 | 449.08 | 15297.39 | 8855.62 | 152.72 | .18 | .3595 | 34.261 | .0000 | .000 |
| 1033.346 | 580.87 | 577.96 | 6106.96 | 334.34 | .095 | 449.88 | 15331.43 | 8885.44 | 152.50 | .32 | .3597 | 34.260 | .0000 | .000 |
| 1048.346 | 580.71 | 577.81 | 6107.13 | 327.85 | .093 | .00    | 15635.79 | 8885.75 | .00    | .31 | .3596 | 32.871 | .0000 | .000 |
| 1063.346 | 580.54 | 577.64 | 6107.21 | 324.61 | .092 | .00    | 15792.44 | 8886.00 | .00    | .25 | .3596 | 32.101 | .0000 | .000 |
| 1078.346 | 580.37 | 577.47 | 6107.29 | 321.61 | .091 | .00    | 15940.71 | 8886.28 | .00    | .28 | .3596 | 31.332 | .0000 | .000 |
| 1093.346 | 580.20 | 577.30 | 6107.31 | 320.47 | .091 | .00    | 15997.77 | 8886.40 | .00    | .12 | .3596 | 31.024 | .0000 | .000 |
| 1108.346 | 580.03 | 577.13 | 6107.30 | 321.04 | .091 | .00    | 15969.84 | 8886.69 | .00    | .30 | .3596 | 30.483 | .0000 | .000 |
| 1123.346 | 579.86 | 576.96 | 6107.29 | 321.61 | .091 | .00    | 15941.80 | 8886.99 | .00    | .30 | .3596 | 29.942 | .0000 | .000 |
| 1138.346 | 579.69 | 576.79 | 6107.27 | 322.13 | .091 | .00    | 15916.89 | 8887.25 | .00    | .26 | .3596 | 29.459 | .0000 | .000 |
| 1153.346 | 579.52 | 576.62 | 6107.27 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .54 | .3586 | 29.460 | .0000 | .000 |
| 1168.346 | 579.35 | 576.45 | 6107.25 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1183.346 | 579.18 | 576.28 | 6107.23 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1198.346 | 579.01 | 576.11 | 6107.21 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1213.346 | 578.84 | 575.94 | 6107.19 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1228.346 | 578.67 | 575.77 | 6107.17 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1243.346 | 578.50 | 575.60 | 6107.15 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1258.346 | 578.33 | 575.43 | 6107.13 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1273.346 | 578.16 | 575.26 | 6107.11 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1288.346 | 577.99 | 575.09 | 6107.09 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1303.346 | 577.82 | 574.92 | 6107.07 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1318.346 | 577.65 | 574.75 | 6107.05 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1333.346 | 577.48 | 574.58 | 6107.03 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1348.346 | 577.31 | 574.41 | 6107.01 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1363.346 | 577.14 | 574.24 | 6106.99 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1378.346 | 576.97 | 574.07 | 6106.97 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1393.346 | 576.80 | 573.90 | 6106.95 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1408.346 | 576.63 | 573.73 | 6106.93 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1423.346 | 576.46 | 573.56 | 6106.91 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1438.346 | 576.29 | 573.39 | 6106.89 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1453.346 | 576.12 | 573.22 | 6106.87 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1468.346 | 575.95 | 573.05 | 6106.85 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1483.346 | 575.78 | 572.88 | 6106.83 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1498.346 | 575.61 | 572.71 | 6106.81 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1513.346 | 575.44 | 572.54 | 6106.79 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1528.346 | 575.27 | 572.37 | 6106.77 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1543.346 | 575.10 | 572.20 | 6106.75 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1558.346 | 574.93 | 572.03 | 6106.73 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1573.346 | 574.76 | 571.86 | 6106.71 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1588.346 | 574.59 | 571.69 | 6106.69 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1603.346 | 574.42 | 571.52 | 6106.67 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1618.346 | 574.25 | 571.35 | 6106.65 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1633.346 | 574.08 | 571.18 | 6106.63 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1648.346 | 573.91 | 571.01 | 6106.61 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1663.346 | 573.74 | 570.84 | 6106.59 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1678.346 | 573.57 | 570.67 | 6106.57 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1693.346 | 573.40 | 570.50 | 6106.55 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1708.346 | 573.23 | 570.33 | 6106.53 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1723.346 | 573.06 | 570.16 | 6106.51 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1738.346 | 572.89 | 569.99 | 6106.49 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1753.346 | 572.72 | 569.82 | 6106.47 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1768.346 | 572.55 | 569.65 | 6106.45 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1783.346 | 572.38 | 569.48 | 6106.43 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 1798.346 | 572.21 | 569.31 | 6106.41 | 322.13 | .091 | .00    | 15823.73 | 8888.14 | .00    | .35 | .3583 | 20.670 | .0000 | .000 |
| 18       |        |        |         |        |      |        |          |         |        |     |       |        |       |      |

GAS BUILDUP IN SLOT, DW/DT = -2.0847-C4

GAS BUILDUP IN SLOT, DM/DT = -2.0717-04

GAS BUILDUP IN SLOT, DW/DT = -2.0678-04

|                                           |  |  |                |               |                  |              |              |
|-------------------------------------------|--|--|----------------|---------------|------------------|--------------|--------------|
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 1   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 |              |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 2   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 |              |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 3   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 |              |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 4   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 |              |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 5   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 |              |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 6   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 7   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.12 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 8   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 9   | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 10  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 11  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 12  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 13  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 14  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 15  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 16  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 17  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 18  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 19  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 20  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 21  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 22  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 23  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 24  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 25  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 26  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 27  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 28  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 29  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 30  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 31  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 32  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 33  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 34  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 35  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 36  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 37  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 38  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 39  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 40  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 41  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 42  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 43  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 44  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 45  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 46  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 47  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 48  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 49  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 50  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 51  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 52  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 53  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 54  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 55  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 56  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 57  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 58  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 59  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 60  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 61  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 62  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 63  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 64  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 65  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 66  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 67  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 68  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 69  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 70  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 71  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 72  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 73  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 74  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 75  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 76  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 77  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 78  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 79  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 80  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 81  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 82  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 83  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 84  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 85  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 86  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 87  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 88  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 89  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 90  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 91  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 92  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 93  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 94  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.56 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 95  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.59 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 96  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.92 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 97  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=449.94 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 98  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.90 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 99  | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=446.08 |
| WEB BURNOUT INCREMENT LOCATION = 974.7810 |  |  | SECTOR NO. 100 | TAU = 34.4091 | TAUWDP = 34.4091 | TIME = 91.00 | ALPHI=445.84 |

|          |       |       |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|----------|-------|-------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| •PARTBN• | TIME= | 92.00 | IS=0 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 971.26 | AINCHI= | 959.78 | DELZ= | 11.475 | ALP= | 450.05 | ALPHI= | 446.71 |
| •PARTBN• | TIME= | 92.00 | IS=1 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 970.24 | AINCHI= | 959.78 | DELZ= | 10.458 | ALP= | 450.07 | ALPHI= | 447.02 |
| •PARTBN• | TIME= | 92.00 | IS=2 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 969.51 | AINCHI= | 959.78 | DELZ= | 9.732  | ALP= | 450.09 | ALPHI= | 447.25 |
| •PARTBN• | TIME= | 92.00 | IS=3 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 969.66 | AINCHI= | 959.78 | DELZ= | 9.876  | ALP= | 450.09 | ALPHI= | 447.21 |
| •PARTBN• | TIME= | 92.00 | IS=4 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 970.43 | AINCHI= | 959.78 | DELZ= | 10.646 | ALP= | 450.07 | ALPHI= | 446.97 |
| •PARTBN• | TIME= | 92.00 | IS=5 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 971.36 | AINCHI= | 959.78 | DELZ= | 11.576 | ALP= | 450.04 | ALPHI= | 446.68 |
| •PARTBN• | TIME= | 92.00 | IS=6 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 971.60 | AINCHI= | 959.78 | DELZ= | 11.821 | ALP= | 450.04 | ALPHI= | 446.60 |
| •PARTBN• | TIME= | 92.00 | IS=7 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 971.55 | AINCHI= | 959.78 | DELZ= | 11.773 | ALP= | 450.04 | ALPHI= | 446.61 |
| •PARTBN• | TIME= | 92.00 | IS=8 | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78 | AINCW= | 971.26 | AINCHI= | 959.78 | DELZ= | 11.475 | ALP= | 450.05 | ALPHI= | 446.71 |

IGNITION TIME, TIME (S) 92.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10097410.     | 2269989.9    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10134991.     | 2278436.7    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 58031.696     | 13046.044    |
| DELIVERED TOTAL IMPULSE (N•S,LBF•S)        | SRMOTI               | .10320708+10  | .23201874+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.43733     | 256.43733    |
| VACUUM TOTAL IMPULSE (N•S,LBF•S)           | SRMVTI               | .10816681+10  | .24316866+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6265012     | 1.6265012    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3999.0070     | 8816.3013    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 425740.66     | 938597.50    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 31.145190     | 68.663391    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 771.69267     | 1701.2911    |
| TOTAL BURN AREA (M••2,IN••2)               | ABTOT                | 253.95798     | 388985.64    |
| TOTAL PROPELLANT VOLUME (M••3,IN••3)       | VF                   | 47.693926     | 2910461.9    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 79602.507     | 175934.41    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1249.7867     | 2755.3080    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1597008     | 1.1597008    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.841839     | 28.311409    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1558.9980     | 5114.8230    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .95054423-01  | .95054423-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M••2,LBF/IN••2)          | PH                   | .39977688+09  | 579.82735    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)   | SPHDT                | .45365433+11  | 65796.998    |
| BURN AREA (M••2,IN••2)                     | AHH                  | 5.2952631     | 8207.6743    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .90852060-02  | .35760528    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .89266015     | 35.144101    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFH                  | .89320318     | 54506.602    |
| GAS VOLUME (M••3,IN••3)                    | VFH                  | 54.210629     | 3308135.5    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3394.3020     | 6109.7436    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M••2,IN••2)              | ABCYL                | 245.66272     | 380777.97    |
| SEGMENT FACE BURN AREA (M••2,IN••2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFCTL                | 461798757     | 2855835.4    |
| GAS VOLUME (M••3,IN••3)                    | VP                   | 242.57972     | 14803123.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M••2,LBF/IN••2)  | PON                  | .39309395+09  | 570.13458    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)   | SPONDT               | .43578198+11  | 62479.645    |
| BURN AREA (M••2,IN••2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(N1+1,1)          | .90809382-02  | .35751725    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1+2,1)          | .90730686-02  | .35720743    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M••3,IN••3)                    | VPN                  | 17.047463     | 1040390.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(N1+2,3)         | 3372.6329     | 6106.7391    |
| PORT AREA, NOZ ENT (M••2,IN••2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M••2,IN••2)                   | AT                   | 1.5856456     | 2457.7556    |
| EXPANSION RATIO                            | EPR                  | 6.7786363     | 6.7786363    |
| PRESSURE RATIO                             | PEPO                 | .23227353-01  | .23227353-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | RBTO   | TAUTO. |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    |
| FORE                        | 579.83 | 579.82 | 6109.74 | 8.54   | .002 | 401.18 | 12804.90 | 189.95  | 186.17 | -3.79  | .3575  | 35.144 | .0000  | .000   |
| 15.000                      | 579.82 | 579.82 | 6109.74 | 14.65  | .004 | 401.44 | 12822.35 | 326.42  | 136.54 | .07    | .3575  | 35.103 | .0000  | .000   |
| 30.000                      | 579.82 | 579.81 | 6109.73 | 20.75  | .006 | 401.71 | 12839.76 | 462.99  | 136.63 | .07    | .3575  | 35.098 | .0000  | .000   |
| 45.000                      | 579.81 | 579.79 | 6109.72 | 26.83  | .008 | 401.97 | 12857.15 | 599.64  | 136.72 | .07    | .3575  | 35.094 | .0000  | .000   |
| 60.000                      | 579.81 | 579.78 | 6109.70 | 32.91  | .009 | 402.24 | 12874.50 | 736.38  | 136.81 | .07    | .3575  | 35.089 | .0000  | .000   |
| 75.000                      | 579.80 | 579.75 | 6109.69 | 38.97  | .011 | 402.51 | 12891.82 | 873.20  | 136.89 | .07    | .3575  | 35.084 | .0000  | .000   |
| 90.000                      | 579.78 | 579.73 | 6109.67 | 45.03  | .013 | 402.77 | 12909.12 | 1010.12 | 136.98 | .07    | .3575  | 35.079 | .0000  | .000   |
| 105.000                     | 579.77 | 579.70 | 6109.64 | 51.07  | .014 | 403.04 | 12926.38 | 1147.12 | 137.07 | .07    | .3574  | 35.074 | .0000  | .000   |
| 116.761                     | 579.76 | 579.67 | 6109.62 | 55.80  | .016 | 403.25 | 12939.89 | 1254.61 | 107.53 | .05    | .3574  | 35.069 | .0000  | .000   |
| 116.771                     | 579.76 | 579.67 | 6109.62 | 56.76  | .016 | 347.50 | 12721.52 | 1254.61 | .00    | -0.00  | .3574  | 35.069 | .0000  | .000   |
| 131.771                     | 579.74 | 579.64 | 6109.60 | 61.90  | .018 | 377.83 | 12811.99 | 1377.94 | 123.37 | .04    | .3574  | 35.070 | .0000  | .000   |
| 143.919                     | 579.72 | 579.60 | 6109.57 | 66.35  | .019 | 402.39 | 12885.39 | 1485.37 | 107.48 | .05    | .3574  | 35.062 | .0000  | .000   |
| 158.919                     | 579.70 | 579.56 | 6109.54 | 72.18  | .020 | 403.32 | 12937.63 | 1622.35 | 137.04 | .07    | .3574  | 35.056 | .0000  | .000   |
| 173.919                     | 579.68 | 579.51 | 6109.51 | 77.98  | .022 | 404.25 | 12989.63 | 1759.64 | 137.35 | .07    | .3574  | 35.050 | .0000  | .000   |
| 188.919                     | 579.65 | 579.46 | 6109.47 | 83.75  | .024 | 405.17 | 13041.41 | 1897.24 | 137.66 | .07    | .3574  | 35.044 | .0000  | .000   |
| 203.919                     | 579.62 | 579.41 | 6109.43 | 89.49  | .025 | 406.10 | 13092.96 | 2035.15 | 137.98 | .07    | .3574  | 35.038 | .0000  | .000   |
| 218.919                     | 579.59 | 579.35 | 6109.39 | 95.21  | .027 | 407.03 | 13144.27 | 2173.37 | 138.29 | .06    | .3574  | 35.032 | .0000  | .000   |
| 233.919                     | 579.56 | 579.28 | 6109.35 | 100.89 | .029 | 407.96 | 13195.36 | 2311.90 | 138.60 | .06    | .3574  | 35.026 | .0000  | .000   |
| 248.919                     | 579.52 | 579.22 | 6109.30 | 106.55 | .030 | 408.89 | 13246.21 | 2450.74 | 138.90 | .06    | .3573  | 35.019 | .0000  | .000   |
| 263.919                     | 579.49 | 579.15 | 6109.25 | 112.19 | .032 | 409.81 | 13296.84 | 2589.89 | 139.21 | .06    | .3573  | 35.013 | .0000  | .000   |
| 278.919                     | 579.45 | 579.08 | 6109.20 | 117.80 | .033 | 410.74 | 13347.23 | 2729.35 | 139.52 | .06    | .3573  | 35.006 | .0000  | .000   |
| 293.919                     | 579.41 | 579.00 | 6109.15 | 123.38 | .035 | 411.67 | 13397.40 | 2869.12 | 139.83 | .06    | .3573  | 35.000 | .0000  | .000   |
| 308.919                     | 579.37 | 578.92 | 6109.09 | 128.94 | .037 | 412.60 | 13447.33 | 3009.19 | 140.14 | .06    | .3573  | 34.993 | .0000  | .000   |
| 323.919                     | 579.32 | 578.83 | 6109.04 | 134.47 | .038 | 413.52 | 13497.34 | 3149.57 | 140.44 | .06    | .3572  | 34.986 | .0000  | .000   |
| 338.919                     | 579.28 | 578.75 | 6108.98 | 139.99 | .040 | 414.45 | 13546.51 | 3290.26 | 140.75 | .06    | .3572  | 34.979 | .0000  | .000   |
| 353.919                     | 579.23 | 578.66 | 6108.92 | 145.48 | .041 | 415.38 | 13595.75 | 3431.25 | 141.06 | .06    | .3572  | 34.972 | .0000  | .000   |
| 368.919                     | 579.18 | 578.56 | 6108.85 | 150.95 | .043 | 416.31 | 13644.97 | 3572.56 | 141.36 | .06    | .3572  | 34.965 | .0000  | .000   |
| 383.919                     | 579.12 | 578.46 | 6108.79 | 156.40 | .044 | 417.24 | 13693.55 | 3714.16 | 141.67 | .06    | .3571  | 34.957 | .0000  | .000   |
| 398.919                     | 579.07 | 578.36 | 6108.72 | 161.83 | .046 | 418.16 | 13742.10 | 3856.08 | 141.97 | .06    | .3571  | 34.950 | .0000  | .000   |
| 403.048                     | 579.05 | 578.33 | 6108.70 | 163.32 | .046 | 418.42 | 13755.43 | 3895.19 | 39.13  | .02    | .3571  | 34.943 | .0000  | .000   |
| 418.048                     | 579.00 | 578.23 | 6108.62 | 169.46 | .048 | 416.56 | 13742.02 | 4037.02 | 141.88 | .06    | .3571  | 34.940 | .0000  | .000   |
| 427.051                     | 578.97 | 578.16 | 6108.57 | 173.14 | .049 | 415.44 | 13734.16 | 4121.83 | 84.85  | .04    | .3570  | 34.934 | .0000  | .000   |
| 427.061                     | 578.96 | 578.32 | 6108.82 | 153.98 | .044 | 411.17 | 13439.30 | 4121.83 | .00    | -0.00  | .3571  | 34.960 | .0000  | .000   |
| 442.061                     | 579.06 | 578.32 | 6108.67 | 165.59 | .047 | 418.98 | 14380.06 | 4128.53 | 6.43   | -.27   | .3571  | 34.960 | .0000  | .000   |
| 457.061                     | 579.17 | 578.27 | 6108.44 | 182.66 | .052 | 419.14 | 13272.10 | 4203.08 | 74.46  | -.10   | .3571  | 34.932 | .0000  | .000   |
| 463.204                     | 579.21 | 578.22 | 6108.31 | 191.60 | .054 | 401.11 | 12804.30 | 4253.20 | 50.13  | .01    | .3571  | 34.891 | .0000  | .000   |
| 478.204                     | 579.14 | 578.10 | 6108.22 | 197.19 | .056 | 401.69 | 12842.78 | 4389.57 | 136.44 | .07    | .3571  | 34.870 | .0000  | .000   |
| 493.204                     | 579.07 | 577.97 | 6108.14 | 202.76 | .057 | 402.26 | 12881.39 | 4526.13 | 136.62 | .07    | .3571  | 34.861 | .0000  | .000   |
| 508.204                     | 579.00 | 577.83 | 6108.05 | 208.32 | .059 | 402.84 | 12919.25 | 4662.88 | 136.81 | .06    | .3571  | 34.851 | .0000  | .000   |
| 523.204                     | 578.93 | 577.69 | 6107.95 | 213.85 | .061 | 403.42 | 12957.24 | 4799.81 | 136.99 | .06    | .3570  | 34.841 | .0000  | .000   |
| 538.204                     | 578.85 | 577.55 | 6107.86 | 219.37 | .062 | 403.99 | 12995.08 | 4936.92 | 137.18 | .06    | .3570  | 34.831 | .0000  | .000   |
| 553.204                     | 578.77 | 577.41 | 6107.76 | 224.88 | .064 | 404.57 | 13032.75 | 5074.21 | 137.36 | .06    | .3570  | 34.821 | .0000  | .000   |
| 568.204                     | 578.69 | 577.26 | 6107.67 | 230.36 | .065 | 405.14 | 13070.27 | 5211.69 | 137.54 | .06    | .3569  | 34.811 | .0000  | .000   |
| 583.204                     | 578.60 | 577.11 | 6107.57 | 235.83 | .067 | 405.72 | 13107.62 | 5349.35 | 137.72 | .06    | .3569  | 34.801 | .0000  | .000   |
| 598.204                     | 578.52 | 576.95 | 6107.46 | 241.28 | .068 | 406.29 | 13144.82 | 5487.19 | 137.91 | .06    | .3569  | 34.791 | .0000  | .000   |
| 613.204                     | 578.43 | 576.79 | 6107.36 | 246.72 | .070 | 406.87 | 13181.85 | 5625.21 | 138.09 | .06    | .3568  | 34.780 | .0000  | .000   |



|          |        |        |         |        |      |        |          |         |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|
| 620.204  | 578.34 | 576.63 | 6107.25 | 252.14 | .071 | 407.45 | 13218.73 | 5763.42 | 138.27 | .06 | .3568 | 34.770 | .0000 |
| 643.204  | 578.25 | 576.47 | 6107.15 | 257.55 | .073 | 408.02 | 13255.44 | 5701.81 | 138.45 | .06 | .3568 | 34.759 | .0000 |
| 650.204  | 578.16 | 576.30 | 6107.04 | 262.95 | .075 | 408.60 | 13291.99 | 6540.37 | 138.63 | .06 | .3567 | 34.749 | .0000 |
| 673.204  | 578.06 | 576.13 | 6106.92 | 268.33 | .076 | 409.17 | 13328.39 | 6179.12 | 138.81 | .06 | .3567 | 34.738 | .0000 |
| 686.204  | 577.97 | 575.95 | 6106.81 | 273.69 | .078 | 409.75 | 13364.62 | 6318.04 | 138.99 | .06 | .3566 | 34.727 | .0000 |
| 703.204  | 577.87 | 575.77 | 6106.69 | 279.05 | .079 | 410.32 | 13400.69 | 6457.15 | 139.17 | .06 | .3566 | 34.717 | .0000 |
| 718.204  | 577.77 | 575.59 | 6106.58 | 284.39 | .081 | 410.90 | 13436.61 | 6596.43 | 139.35 | .06 | .3565 | 34.706 | .0000 |
| 736.191  | 577.71 | 575.49 | 6106.51 | 287.23 | .081 | 411.21 | 13455.66 | 6670.67 | 139.47 | .03 | .3565 | 34.695 | .0000 |
| 741.191  | 577.57 | 575.31 | 6106.44 | 290.53 | .082 | 413.18 | 13585.89 | 6810.46 | 139.65 | .06 | .3565 | 34.689 | .0000 |
| 746.336  | 577.53 | 575.24 | 6106.41 | 291.66 | .083 | 413.86 | 13630.16 | 6858.56 | 140.12 | .02 | .3564 | 34.683 | .0000 |
| 746.346  | 577.50 | 575.09 | 6107.11 | 259.34 | .074 | 57.67  | 15306.65 | 6658.56 | .00    | .00 | .3565 | 34.733 | .0000 |
| 761.346  | 577.62 | 575.65 | 6106.87 | 270.85 | .077 | 167.24 | 14749.90 | 6096.91 | 38.16  | .20 | .3565 | 34.733 | .0000 |
| 776.346  | 577.74 | 575.56 | 6106.97 | 284.63 | .081 | 276.82 | 14191.14 | 6972.35 | 75.33  | .10 | .3565 | 34.709 | .0000 |
| 791.346  | 577.86 | 575.42 | 6106.19 | 301.17 | .085 | 386.39 | 13630.40 | 7084.87 | 112.51 | .01 | .3565 | 34.679 | .0000 |
| 794.631  | 577.88 | 575.38 | 6106.09 | 305.45 | .087 | 411.85 | 13499.83 | 7116.32 | 31.46  | .01 | .3565 | 34.643 | .0000 |
| 809.631  | 577.76 | 575.18 | 6105.98 | 310.06 | .088 | 412.83 | 13564.93 | 7256.15 | 139.89 | .06 | .3564 | 34.637 | .0000 |
| 824.631  | 577.64 | 574.98 | 6105.87 | 314.66 | .089 | 413.82 | 13629.53 | 7396.30 | 140.21 | .06 | .3564 | 34.627 | .0000 |
| 839.631  | 577.51 | 574.78 | 6105.75 | 319.24 | .091 | 414.80 | 13693.62 | 7536.77 | 140.52 | .06 | .3563 | 34.617 | .0000 |
| 854.781  | 577.38 | 574.57 | 6105.64 | 323.79 | .092 | 415.79 | 13757.09 | 7677.08 | 140.37 | .06 | .3563 | 34.607 | .0000 |
| 869.781  | 577.19 | 574.36 | 6105.62 | 324.56 | .092 | 420.16 | 13982.83 | 7818.75 | 141.72 | .04 | .3562 | 34.597 | .0000 |
| 884.781  | 576.99 | 574.15 | 6105.59 | 325.55 | .092 | 424.62 | 14260.75 | 7961.94 | 143.19 | .00 | .3562 | 34.602 | .0000 |
| 899.781  | 576.81 | 573.94 | 6105.56 | 326.75 | .093 | 429.08 | 14410.75 | 8106.66 | 144.70 | .03 | .3562 | 34.606 | .0000 |
| 914.781  | 576.62 | 573.74 | 6105.53 | 328.17 | .093 | 433.53 | 14612.83 | 8252.97 | 146.24 | .06 | .3563 | 34.608 | .0000 |
| 929.781  | 576.44 | 573.53 | 6105.48 | 329.79 | .094 | 437.98 | 14806.99 | 8400.92 | 147.85 | .09 | .3567 | 34.611 | .0000 |
| 944.781  | 576.26 | 573.32 | 6105.44 | 331.61 | .094 | 442.43 | 14993.24 | 8550.58 | 149.53 | .12 | .3572 | 34.613 | .0000 |
| 959.781  | 576.09 | 573.11 | 6105.38 | 333.64 | .095 | 446.88 | 15171.56 | 8702.04 | 151.31 | .15 | .3579 | 34.616 | .0000 |
| 974.781  | 575.96 | 572.96 | 6105.34 | 335.24 | .095 | 450.36 | 15296.50 | 8813.55 | 111.28 | .23 | .3586 | 34.409 | .0000 |
| 989.781  | 575.88 | 572.96 | 6105.46 | 330.76 | .094 | .00    | 15504.45 | 8813.75 | .00    | .20 | .3586 | 33.640 | .0000 |
| 1004.781 | 575.83 | 572.96 | 6105.54 | 327.50 | .093 | .00    | 15659.02 | 8813.89 | .00    | .14 | .3586 | 32.871 | .0000 |
| 1019.781 | 575.77 | 572.96 | 6105.62 | 324.48 | .092 | .00    | 15805.67 | 8814.14 | .00    | .25 | .3586 | 32.101 | .0000 |
| 1034.781 | 575.72 | 572.96 | 6105.69 | 321.67 | .091 | .00    | 15944.41 | 8814.42 | .00    | .28 | .3586 | 31.332 | .0000 |
| 1049.781 | 575.71 | 572.96 | 6105.72 | 320.60 | .091 | .00    | 15997.77 | 8814.54 | .00    | .12 | .3586 | 31.024 | .0000 |
| 1055.791 | 575.72 | 572.96 | 6105.70 | 321.17 | .091 | .00    | 15989.84 | 8814.84 | .00    | .30 | .3586 | 30.483 | .0000 |
| 1070.791 | 575.73 | 572.96 | 6105.69 | 321.75 | .091 | .00    | 15941.80 | 8815.13 | .00    | .30 | .3586 | 29.942 | .0000 |
| 1084.171 | 575.73 | 572.96 | 6105.68 | 322.26 | .091 | .00    | 15916.69 | 8815.40 | .00    | .27 | .3586 | 29.459 | .0000 |
| AFT(A)   | 570.14 | 544.52 | 6069.07 | 991.80 | .282 | .000   | 15823.73 | 8816.30 | .00    | .55 | .3575 | 29.460 | .0000 |
| AFT(B)   | 570.13 | 570.13 | 6105.74 | .02    | .000 | .000   | 16413.12 | .35     | .00    | .35 | .3572 | 20.670 | .0000 |



| SLOT                                    | PO        | P         | T                  | U         | AP            | DWDT           | AB          | RB         | DELTA        | #SLOT     |
|-----------------------------------------|-----------|-----------|--------------------|-----------|---------------|----------------|-------------|------------|--------------|-----------|
| INTERFACE                               |           |           |                    |           |               |                |             |            | TAU          |           |
| LOCATION                                |           |           |                    |           |               |                |             |            | IN.          |           |
| IN.                                     | PSIA      | PSIA      | DEG. R             | FT/SEC    | SQ. IN.       | LB/SEC         | SQ. IN.     | IN/SEC     |              | LB/SEC.   |
| GAS BUILDUP IN SLOT, DW/DT = -2.1002-04 |           |           |                    |           |               |                |             |            |              |           |
| FORWARD                                 | 5.7976+02 | 5.7967+02 | 6.1086+03          | 4.3865+01 | 1.6460+04     | 0.0000         | 0.0000      | 0.0000     | 0.0000       | 1.2546+03 |
| AFT                                     | 5.7975+02 | 5.7967+02 | 6.1086+03          | 4.3865+01 | 1.6460+04     | 0.0000         | 0.0000      | 0.0000     | 0.0000       | 1.2546+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.0874-04 |           |           |                    |           |               |                |             |            |              |           |
| FORWARD                                 | 5.7897+02 | 5.7816+02 | 6.1086+03          | 1.4514+02 | 1.6383+04     | 0.0000         | 0.0000      | 0.0000     | 0.0000       | 4.1218+03 |
| AFT                                     | 5.7913+02 | 5.7832+02 | 6.1086+03          | 1.4511+02 | 1.6383+04     | 0.0000         | 0.0000      | 0.0000     | 0.0000       | 4.1218+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.0840-04 |           |           |                    |           |               |                |             |            |              |           |
| FORWARD                                 | 5.7753+02 | 5.7524+02 | 6.1061+03          | 2.4265+02 | 1.6383+04     | 0.0000         | 0.0000      | 0.0000     | 0.0000       | 6.8586+03 |
| AFT                                     | 5.7798+02 | 5.7569+02 | 6.1071+03          | 2.4249+02 | 1.6383+04     | 0.0000         | 0.0000      | 0.0000     | 0.0000       | 6.8586+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.0840-04 |           |           |                    |           |               |                |             |            |              |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 72)= 974.78 | 959.78    | AINCW= 966.76 | AINCHI= 959.78 | DELZ= 6.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.09 | AINCHI= 959.78 | DELZ= 8.304 | ALP=450.13 | ALPHI=447.73 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.78 | AINCHI= 959.78 | DELZ= 8.003 | ALP=450.14 | ALPHI=447.83 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.76 | AINCHI= 959.78 | DELZ= 8.982 | ALP=450.17 | ALPHI=448.15 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.03 | AINCHI= 959.78 | DELZ= 6.252 | ALP=450.19 | ALPHI=448.38 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.18 | AINCHI= 959.78 | DELZ= 6.397 | ALP=450.18 | ALPHI=448.34 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 966.95 | AINCHI= 959.78 | DELZ= 7.171 | ALP=450.16 | ALPHI=448.09 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 967.89 | AINCHI= 959.78 | DELZ= 8.105 | ALP=450.14 | ALPHI=447.60 |           |
| AFT                                     | 5.7524+02 | 5.7478    | ZCALC( 73)= 974.78 | 959.78    | AINCW= 968.13 | AINCHI= 959.78 | DELZ= 8.353 | ALP=450.13 | ALPHI=447.72 |           |
| FORWARD                                 | 5.7524+02 | 5.7478    | ZCALC(             |           |               |                |             |            |              |           |

•PARTIAL TIME= 93.00 IS=8 ZCALC( 73)= 974.78 ZCALC( 72)= 959.78 AINCH= 964.32 AINCH= 959.78 DELZ= 4.536 ALP=450.23 ALPHJ=448.95

IGNITION TIME, TIME (S)

93.000000

DATE 071076

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| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 10017551.     | 2252035.0    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 10052678.     | 2259932.0    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 58784.315     | 13215.240    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | 10421283+10   | 23427976+09  |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.39410     | 256.39410    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | 10917619+10   | 24543785+09  |
| THRUST COEFFICIENT                         | CF                   | 1.6261271     | 1.6261271    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3966.5455     | 8744.7360    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 429723.45     | 947378.05    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | HIF                  | 31.549116     | 69.553894    |
| INERT MASS REMAINING (KG,LBM)              | HIR                  | 740.24425     | 1631.9592    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 249.67809     | 387001.82    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 45.420393     | 2771722.4    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WGTOT                | 75821.959     | 167158.81    |
| TOTAL GAS MASS (KG,LBM)                    | GAMA                 | 1240.7717     | 2735.4334    |
| RATIO OF SPECIFIC HEATS                    | AMW                  | 1.1596960     | 1.1596960    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | CSTAR                | 12.840623     | 28.308727    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | ANPN                 | 1558.9081     | 5114.5278    |
| MAXIMUM CHAMBER MACH NUMBER                |                      | .95261300-01  | .95261300-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .39625430+09  | 574.71828    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .45763449+11  | 66374.271    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 5.1268582     | 7946.6462    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .90588014-02  | .35656699    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .90173826     | 35.501507    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .84596521     | 81623.965    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.257867     | 3311018.2    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3393.4222     | 6108.1600    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCTE                | 244.55124     | 379055.18    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 44.572462     | 2719978.5    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 242.97051     | 14826970.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .38967316+09  | 565.17315    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .43469582+11  | 63047.300    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .93532112-02  | .35642564    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .90453576-02  | .35611644    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 29.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3391.7785     | 6105.2012    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5864514     | 2459.0046    |
| EXPANSION RATIO                            | EPR                  | 6.7751933     | 6.7751933    |
| PRESSURE RATIO                             | PEPO                 | .23243088-01  | .23243088-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE                        | 574.72 | 574.71 | 6108.16 | 8.23   | .002 | 403.43 | 12948.61 | 183.50  | 179.68 | -3.82  | .3564  | 35.502 | .0000  | .000  |
| 15.000                      | 574.71 | 574.71 | 6108.15 | 14.34  | .004 | 403.69 | 12968.14 | 320.31  | 136.87 | .06    | .3564  | 35.460 | .0000  | .000  |
| 30.000                      | 574.71 | 574.70 | 6108.15 | 20.44  | .006 | 403.96 | 12983.65 | 457.21  | 136.96 | .06    | .3564  | 35.455 | .0000  | .000  |
| 45.000                      | 574.71 | 574.69 | 6108.14 | 26.53  | .008 | 404.22 | 13001.13 | 594.21  | 137.05 | .06    | .3564  | 35.451 | .0000  | .000  |
| 60.000                      | 574.70 | 574.67 | 6108.12 | 32.60  | .009 | 404.49 | 13018.58 | 731.29  | 137.14 | .06    | .3564  | 35.446 | .0000  | .000  |
| 75.000                      | 574.69 | 574.65 | 6108.10 | 38.67  | .011 | 404.75 | 13035.99 | 868.45  | 137.23 | .06    | .3563  | 35.441 | .0000  | .000  |
| 90.000                      | 574.68 | 574.62 | 6108.08 | 44.72  | .013 | 405.02 | 13053.38 | 1005.71 | 137.32 | .06    | .3563  | 35.436 | .0000  | .000  |
| 105.000                     | 574.66 | 574.59 | 6108.06 | 50.76  | .014 | 405.28 | 13070.73 | 1143.05 | 137.40 | .06    | .3563  | 35.431 | .0000  | .000  |
| 116.761                     | 574.65 | 574.57 | 6108.04 | 55.49  | .016 | 405.49 | 13084.32 | 1250.80 | 107.79 | .05    | .3563  | 35.426 | .0000  | .000  |
| 110.771                     | 574.65 | 574.56 | 6108.04 | 56.53  | .016 | 348.27 | 12845.77 | 1250.80 | .00    | -.00   | .3563  | 35.427 | .0000  | .000  |
| 131.771                     | 574.63 | 574.53 | 6108.01 | 61.62  | .017 | 379.41 | 12947.21 | 1374.16 | 123.39 | .03    | .3563  | 35.427 | .0000  | .000  |
| 143.919                     | 574.62 | 574.50 | 6107.99 | 66.03  | .019 | 404.64 | 13029.51 | 1481.79 | 107.67 | .04    | .3563  | 35.419 | .0000  | .000  |
| 150.919                     | 574.59 | 574.46 | 6107.96 | 71.86  | .020 | 405.57 | 13082.09 | 1619.10 | 137.38 | .06    | .3563  | 35.413 | .0000  | .000  |
| 173.919                     | 574.57 | 574.41 | 6107.93 | 77.66  | .022 | 406.50 | 13134.45 | 1756.73 | 137.69 | .06    | .3563  | 35.407 | .0000  | .000  |
| 186.919                     | 574.54 | 574.36 | 6107.89 | 83.44  | .024 | 407.42 | 13186.57 | 1894.67 | 138.00 | .06    | .3563  | 35.401 | .0000  | .000  |
| 203.919                     | 574.52 | 574.30 | 6107.85 | 89.18  | .025 | 408.35 | 13238.46 | 2032.92 | 138.31 | .06    | .3563  | 35.395 | .0000  | .000  |
| 218.919                     | 574.49 | 574.24 | 6107.81 | 94.90  | .027 | 409.28 | 13290.11 | 2171.47 | 138.62 | .06    | .3563  | 35.389 | .0000  | .000  |
| 233.919                     | 574.45 | 574.18 | 6107.77 | 100.59 | .029 | 410.20 | 13341.53 | 2310.34 | 138.92 | .06    | .3562  | 35.383 | .0000  | .000  |
| 248.919                     | 574.42 | 574.12 | 6107.72 | 106.25 | .030 | 411.13 | 13392.72 | 2449.51 | 139.23 | .06    | .3562  | 35.377 | .0000  | .000  |
| 263.919                     | 574.38 | 574.05 | 6107.67 | 111.89 | .032 | 412.06 | 13443.67 | 2588.99 | 139.54 | .06    | .3562  | 35.370 | .0000  | .000  |
| 278.919                     | 574.35 | 573.98 | 6107.62 | 117.50 | .033 | 412.99 | 13494.39 | 2728.78 | 139.85 | .06    | .3562  | 35.363 | .0000  | .000  |
| 293.919                     | 574.31 | 573.90 | 6107.57 | 123.09 | .035 | 413.91 | 13544.87 | 2868.87 | 140.15 | .06    | .3562  | 35.357 | .0000  | .000  |
| 308.919                     | 574.26 | 573.82 | 6107.51 | 128.65 | .036 | 414.84 | 13595.12 | 3009.27 | 140.46 | .06    | .3561  | 35.350 | .0000  | .000  |
| 323.919                     | 574.22 | 573.74 | 6107.46 | 134.19 | .038 | 415.77 | 13645.14 | 3149.98 | 140.76 | .06    | .3561  | 35.343 | .0000  | .000  |
| 338.919                     | 574.17 | 573.65 | 6107.40 | 139.71 | .040 | 416.70 | 13694.93 | 3290.99 | 141.07 | .06    | .3561  | 35.336 | .0000  | .000  |
| 353.919                     | 574.13 | 573.56 | 6107.34 | 145.20 | .041 | 417.62 | 13744.47 | 3432.31 | 141.38 | .06    | .3561  | 35.329 | .0000  | .000  |
| 368.919                     | 574.08 | 573.47 | 6107.27 | 150.68 | .043 | 418.55 | 13793.79 | 3573.93 | 141.68 | .06    | .3560  | 35.322 | .0000  | .000  |
| 383.919                     | 574.02 | 573.37 | 6107.21 | 156.13 | .044 | 419.48 | 13842.87 | 3715.86 | 141.98 | .06    | .3560  | 35.314 | .0000  | .000  |
| 398.919                     | 573.97 | 573.27 | 6107.14 | 161.56 | .046 | 420.40 | 13891.72 | 3858.09 | 142.29 | .06    | .3560  | 35.307 | .0000  | .000  |
| 403.048                     | 573.95 | 573.24 | 6107.12 | 163.06 | .046 | 420.66 | 13905.12 | 3897.30 | 39.22  | .02    | .3560  | 35.299 | .0000  | .000  |
| 418.048                     | 573.91 | 573.14 | 6107.04 | 169.20 | .048 | 418.80 | 13891.04 | 4039.44 | 142.20 | .06    | .3559  | 35.297 | .0000  | .000  |
| 427.051                     | 573.87 | 573.08 | 6106.99 | 172.88 | .049 | 417.68 | 13882.78 | 4124.45 | 85.04  | .03    | .3559  | 35.291 | .0000  | .000  |
| 427.061                     | 573.87 | 573.22 | 6107.21 | 155.74 | .044 | -97.71 | 15407.39 | 4124.45 | .00    | -.00   | .3559  | 35.316 | .0000  | .000  |
| 442.061                     | 573.96 | 573.22 | 6107.08 | 166.52 | .047 | 110.24 | 14418.65 | 4126.85 | 2.12   | -.28   | .3560  | 35.317 | .0000  | .000  |
| 457.061                     | 574.06 | 573.16 | 6106.86 | 182.55 | .052 | 318.20 | 13384.48 | 4199.54 | 72.59  | -.11   | .3560  | 35.289 | .0000  | .000  |
| 463.204                     | 574.10 | 573.12 | 6106.73 | 190.97 | .054 | 403.36 | 12947.84 | 4249.60 | 50.06  | .01    | .3560  | 35.248 | .0000  | .000  |
| 478.204                     | 574.03 | 573.00 | 6106.65 | 196.57 | .056 | 403.94 | 12986.53 | 4386.31 | 136.77 | .06    | .3560  | 35.227 | .0000  | .000  |
| 493.204                     | 573.96 | 572.87 | 6106.56 | 202.14 | .057 | 404.51 | 13025.06 | 4523.21 | 136.96 | .06    | .3560  | 35.218 | .0000  | .000  |
| 508.204                     | 573.89 | 572.73 | 6106.47 | 207.70 | .059 | 405.09 | 13063.42 | 4660.29 | 137.14 | .06    | .3560  | 35.209 | .0000  | .000  |
| 523.204                     | 573.81 | 572.60 | 6106.38 | 213.25 | .060 | 405.66 | 13101.62 | 4797.56 | 137.33 | .06    | .3559  | 35.198 | .0000  | .000  |
| 538.204                     | 573.74 | 572.46 | 6106.29 | 218.77 | .062 | 406.24 | 13139.66 | 4935.01 | 137.51 | .06    | .3559  | 35.188 | .0000  | .000  |
| 553.204                     | 573.66 | 572.32 | 6106.19 | 224.28 | .064 | 406.81 | 13177.54 | 5072.64 | 137.69 | .06    | .3559  | 35.178 | .0000  | .000  |
| 568.204                     | 573.58 | 572.17 | 6106.09 | 229.77 | .065 | 407.39 | 13215.25 | 5210.45 | 137.87 | .06    | .3558  | 35.168 | .0000  | .000  |
| 583.204                     | 573.50 | 572.02 | 6105.99 | 235.24 | .067 | 407.96 | 13252.80 | 5348.44 | 138.05 | .06    | .3558  | 35.158 | .0000  | .000  |
| 598.204                     | 573.41 | 571.87 | 6105.89 | 240.70 | .068 | 408.54 | 13290.18 | 5486.62 | 138.23 | .06    | .3557  | 35.147 | .0000  | .000  |
| 613.204                     | 573.33 | 571.71 | 6105.79 | 246.15 | .070 | 409.11 | 13327.41 | 5624.97 | 138.41 | .06    | .3557  | 35.137 | .0000  | .000  |

|          |        |        |         |        |      |        |          |         |        |     |      |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|------|--------|-------|------|
| 628.204  | 573.24 | 571.55 | 6105.68 | 251.57 | .071 | 409.69 | 13364.47 | 5763.51 | 138.59 | .06 | 3557 | 35.126 | .0000 | .000 |
| 643.204  | 573.15 | 571.39 | 6105.57 | 256.99 | .073 | 410.26 | 13401.36 | 5702.23 | 138.77 | .06 | 3556 | 35.116 | .0000 | .000 |
| 658.204  | 573.05 | 571.22 | 6105.46 | 262.39 | .074 | 411.84 | 13430.09 | 6541.12 | 138.95 | .06 | 3556 | 35.105 | .0000 | .000 |
| 673.204  | 572.96 | 571.05 | 6105.35 | 267.78 | .076 | 411.41 | 13474.66 | 6180.19 | 139.13 | .06 | 3556 | 35.094 | .0000 | .000 |
| 688.204  | 572.86 | 570.88 | 6105.24 | 273.15 | .077 | 411.99 | 13511.37 | 6319.45 | 139.31 | .06 | 3555 | 35.084 | .0000 | .000 |
| 703.204  | 572.77 | 570.70 | 6105.12 | 278.51 | .079 | 412.56 | 13547.32 | 6458.88 | 139.49 | .06 | 3555 | 35.073 | .0000 | .000 |
| 718.204  | 572.67 | 570.52 | 6105.01 | 283.86 | .080 | 413.14 | 13583.43 | 6598.49 | 139.67 | .06 | 3554 | 35.062 | .0000 | .000 |
| 725.191  | 572.61 | 570.42 | 6104.94 | 285.70 | .081 | 413.44 | 13622.54 | 6672.90 | 74.44  | .03 | 3554 | 35.051 | .0000 | .000 |
| 741.191  | 572.48 | 570.24 | 6104.87 | 290.02 | .082 | 415.42 | 13733.45 | 6813.01 | 140.17 | .05 | 3553 | 35.045 | .0000 | .000 |
| 746.336  | 572.43 | 570.17 | 6104.84 | 291.16 | .083 | 416.10 | 13777.95 | 6861.22 | 48.23  | .02 | 3553 | 35.039 | .0000 | .000 |
| 746.346  | 572.41 | 570.59 | 6105.48 | 261.61 | .074 | 43.11  | 15324.60 | 6861.22 | .00    | .00 | 3554 | 35.089 | .0000 | .000 |
| 761.346  | 572.52 | 570.55 | 6105.26 | 272.11 | .077 | 157.89 | 14807.64 | 6895.42 | 33.99  | .21 | 3554 | 35.070 | .0000 | .000 |
| 776.346  | 572.63 | 570.47 | 6104.98 | 285.00 | .081 | 272.66 | 14288.82 | 6968.35 | 72.81  | .11 | 3554 | 35.065 | .0000 | .000 |
| 791.346  | 572.73 | 570.33 | 6104.62 | 300.57 | .085 | 387.43 | 13768.16 | 7079.99 | 111.63 | .02 | 3554 | 35.035 | .0000 | .000 |
| 794.831  | 572.75 | 570.28 | 6104.53 | 304.61 | .086 | 414.09 | 13646.92 | 7111.47 | 31.49  | .01 | 3553 | 34.999 | .0000 | .000 |
| 809.831  | 572.63 | 570.09 | 6104.42 | 309.23 | .088 | 415.08 | 13712.37 | 7251.62 | 140.20 | .05 | 3553 | 34.994 | .0000 | .000 |
| 824.831  | 572.51 | 569.89 | 6104.30 | 313.83 | .089 | 416.06 | 13777.30 | 7392.09 | 140.52 | .05 | 3553 | 34.983 | .0000 | .000 |
| 837.831  | 572.39 | 569.69 | 6104.19 | 318.43 | .090 | 417.04 | 13811.72 | 7532.87 | 140.84 | .05 | 3552 | 34.973 | .0000 | .000 |
| 854.781  | 572.26 | 569.48 | 6104.07 | 323.00 | .092 | 418.02 | 13905.42 | 7673.50 | 140.68 | .03 | 3551 | 34.953 | .0000 | .000 |
| 869.781  | 572.07 | 569.28 | 6104.04 | 324.17 | .092 | 422.39 | 14116.70 | 7815.49 | 142.03 | .00 | 3551 | 34.958 | .0000 | .000 |
| 884.781  | 571.89 | 569.07 | 6104.01 | 325.54 | .092 | 426.86 | 14320.51 | 7959.00 | 143.51 | .00 | 3551 | 34.962 | .0000 | .000 |
| 899.781  | 571.71 | 568.86 | 6103.97 | 327.10 | .093 | 431.32 | 14516.06 | 8104.06 | 145.03 | .03 | 3552 | 34.964 | .0000 | .000 |
| 914.781  | 571.53 | 568.66 | 6103.92 | 328.86 | .093 | 435.77 | 14705.75 | 8250.71 | 146.59 | .07 | 3554 | 34.967 | .0000 | .000 |
| 929.781  | 571.35 | 568.45 | 6103.87 | 330.81 | .094 | 440.22 | 14887.17 | 8399.03 | 148.22 | .10 | 3558 | 34.967 | .0000 | .000 |
| 944.781  | 571.18 | 568.24 | 6103.82 | 332.95 | .094 | 444.67 | 15061.13 | 8549.10 | 149.95 | .13 | 3564 | 34.970 | .0000 | .000 |
| 959.781  | 570.97 | 567.97 | 6103.76 | 335.29 | .095 | 449.13 | 15227.62 | 8701.04 | 151.78 | .16 | 3573 | 34.974 | .0000 | .000 |
| 974.781  | 570.87 | 567.87 | 6103.74 | 335.94 | .095 | 450.25 | 15270.60 | 8741.81 | 40.49  | .28 | 3575 | 34.909 | .0000 | .000 |
| 989.781  | 570.81 | 567.81 | 6103.89 | 330.18 | .094 | .00    | 15538.21 | 8742.08 | .00    | .28 | 3575 | 33.640 | .0000 | .000 |
| 1004.781 | 570.75 | 567.75 | 6103.97 | 327.15 | .093 | .00    | 15682.31 | 8742.32 | .00    | .23 | 3575 | 32.871 | .0000 | .000 |
| 1019.781 | 570.72 | 567.72 | 6104.04 | 324.34 | .092 | .00    | 15818.94 | 8742.57 | .00    | .26 | 3575 | 32.101 | .0000 | .000 |
| 1034.781 | 570.70 | 567.70 | 6104.11 | 321.73 | .091 | .00    | 15948.11 | 8742.85 | .00    | .28 | 3575 | 31.332 | .0000 | .000 |
| 1049.781 | 570.71 | 567.71 | 6104.13 | 320.74 | .091 | .00    | 15997.77 | 8742.97 | .00    | .12 | 3575 | 31.024 | .0000 | .000 |
| 1055.791 | 570.72 | 567.72 | 6104.10 | 321.31 | .091 | .00    | 15969.84 | 8743.27 | .00    | .30 | 3575 | 30.483 | .0000 | .000 |
| 1070.791 | 570.71 | 567.71 | 6104.09 | 321.88 | .091 | .00    | 15941.80 | 8743.57 | .00    | .30 | 3575 | 29.942 | .0000 | .000 |
| 1084.791 | 570.73 | 567.73 | 6104.07 | 322.40 | .091 | .00    | 15916.89 | 8743.83 | .00    | .27 | 3575 | 29.459 | .0000 | .000 |
| 1094.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1104.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1114.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1124.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1134.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1144.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1154.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1164.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1174.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1184.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1194.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1204.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1214.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1224.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1234.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1244.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1254.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1264.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1274.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1284.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1294.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1304.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1314.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1324.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1334.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1344.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1354.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1364.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1374.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1384.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1394.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1404.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1414.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1424.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1434.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1444.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1454.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1464.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1474.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1484.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1494.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1504.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |
| 1514.791 | 570.73 | 567.73 | 6104.09 | 322.27 | .082 | .00    | 15823.73 | 8744.74 | .00    | .55 | 3564 | 29.460 | .0000 | .000 |

| SLOT     | INTERFACE | PO        | P         | T         | U         | AP        | DWDOT  | AB      | RB     | DELTA  | WSLOT     |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------|-----------|
| LOCATION | IN.       | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | TAU    | LB/SEC    |
| FOREWARD | 1.1676*02 | 5.7465*02 | 5.7457*02 | 6.1080*03 | 4.4113*01 | 1.6460*04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.2508*03 |
| AFT      | 1.1677*02 | 5.7465*02 | 5.7456*02 | 6.1080*03 | 4.4113*01 | 1.6460*04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.2508*03 |

GAS BUILDUP IN SLOT, DW/DT = -2.1027\*04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 4.2705*02 | 5.7387*02 | 5.7308*02 | 6.1070*03 | 1.4650*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1244*03 |
| AFT      | 4.2706*02 | 5.7402*02 | 5.7322*02 | 6.1072*03 | 1.4647*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1244*03 |

GAS BUILDUP IN SLOT, DW/DT = -2.0903\*04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 7.4634*02 | 5.7243*02 | 5.7017*02 | 6.1048*03 | 2.4486*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8612*03 |
| AFT      | 7.4635*02 | 5.7284*02 | 5.7059*02 | 6.1055*03 | 2.4471*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8612*03 |

GAS BUILDUP IN SLOT, DW/DT = -2.0875\*04

|                                  |          |              |             |        |             |          |         |        |         |        |       |        |      |        |        |        |
|----------------------------------|----------|--------------|-------------|--------|-------------|----------|---------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 2           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.00   |        |       |        |      |        |        |        |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 3           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.00   |        |       |        |      |        |        |        |
| *PARTBN* TIME=                   | 93.50    | IS=1         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 959.83 | AINCHI= | 944.78 | DELZ= | 15.047 | ALP= | 450.35 | ALPHI= | 445.93 |
| *PARTBN* TIME=                   | 93.50    | IS=2         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 959.09 | AINCHI= | 944.78 | DELZ= | 14.313 | ALP= | 450.37 | ALPHI= | 446.16 |
| *PARTBN* TIME=                   | 93.50    | IS=3         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 959.24 | AINCHI= | 944.78 | DELZ= | 14.458 | ALP= | 450.37 | ALPHI= | 446.12 |
| *PARTBN* TIME=                   | 93.50    | IS=4         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 960.01 | AINCHI= | 959.78 | DELZ= | .228   | ALP= | 450.35 | ALPHI= | 450.34 |
| *PARTBN* TIME=                   | 93.50    | IS=5         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 960.96 | AINCHI= | 959.78 | DELZ= | 1.176  | ALP= | 450.32 | ALPHI= | 450.03 |
| *PARTBN* TIME=                   | 93.50    | IS=6         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 961.21 | AINCHI= | 959.78 | DELZ= | 1.429  | ALP= | 450.31 | ALPHI= | 449.95 |
| *PARTBN* TIME=                   | 93.50    | IS=7         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 961.16 | AINCHI= | 959.78 | DELZ= | 1.379  | ALP= | 450.31 | ALPHI= | 449.97 |
| *PARTBN* TIME=                   | 93.50    | IS=8         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 960.85 | AINCHI= | 959.78 | DELZ= | 1.073  | ALP= | 450.32 | ALPHI= | 450.07 |
| *PARTBN* TIME=                   | 93.50    | IS=1         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 959.83 | AINCHI= | 944.78 | DELZ= | 15.047 | ALP= | 450.35 | ALPHI= | 445.93 |
| *PARTBN* TIME=                   | 93.50    | IS=2         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 959.09 | AINCHI= | 944.78 | DELZ= | 14.313 | ALP= | 450.37 | ALPHI= | 446.16 |
| *PARTBN* TIME=                   | 93.50    | IS=3         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 959.24 | AINCHI= | 944.78 | DELZ= | 14.458 | ALP= | 450.37 | ALPHI= | 446.12 |
| *PARTBN* TIME=                   | 93.50    | IS=4         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 960.01 | AINCHI= | 959.78 | DELZ= | .228   | ALP= | 450.35 | ALPHI= | 450.34 |
| *PARTBN* TIME=                   | 93.50    | IS=5         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 960.96 | AINCHI= | 959.78 | DELZ= | 1.176  | ALP= | 450.32 | ALPHI= | 450.03 |
| *PARTBN* TIME=                   | 93.50    | IS=6         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 961.21 | AINCHI= | 959.78 | DELZ= | 1.429  | ALP= | 450.31 | ALPHI= | 449.95 |
| *PARTBN* TIME=                   | 93.50    | IS=7         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 961.16 | AINCHI= | 959.78 | DELZ= | 1.379  | ALP= | 450.31 | ALPHI= | 449.97 |
| *PARTBN* TIME=                   | 93.50    | IS=8         | ZCALC( 73)= | 974.78 | ZCALC( 72)= | 959.78   | AINCW=  | 960.85 | AINCHI= | 959.78 | DELZ= | 1.073  | ALP= | 450.32 | ALPHI= | 450.07 |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 1           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.50   |        |       |        |      |        |        |        |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 4           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.50   |        |       |        |      |        |        |        |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 5           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.50   |        |       |        |      |        |        |        |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 6           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.50   |        |       |        |      |        |        |        |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 7           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.50   |        |       |        |      |        |        |        |
| NEB BURNOUT INCREMENT LOCATION = | 959.7810 | SECTOR NO. = | 8           | TAU =  | 35.1784     | TAUWDP = | 35.1784 | TIME = | 93.50   |        |       |        |      |        |        |        |
| *PARTBN* TIME=                   | 94.00    | IS=1         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 956.37 | AINCHI= | 944.78 | DELZ= | 11.592 | ALP= | 450.44 | ALPHI= | 447.05 |
| *PARTBN* TIME=                   | 94.00    | IS=2         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 956.64 | AINCHI= | 944.78 | DELZ= | 10.855 | ALP= | 450.46 | ALPHI= | 447.28 |
| *PARTBN* TIME=                   | 94.00    | IS=3         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 956.78 | AINCHI= | 944.78 | DELZ= | 11.001 | ALP= | 450.46 | ALPHI= | 447.24 |
| *PARTBN* TIME=                   | 94.00    | IS=4         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 956.56 | AINCHI= | 944.78 | DELZ= | 11.776 | ALP= | 450.44 | ALPHI= | 447.00 |
| *PARTBN* TIME=                   | 94.00    | IS=5         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 957.51 | AINCHI= | 944.78 | DELZ= | 12.724 | ALP= | 450.41 | ALPHI= | 446.70 |
| *PARTBN* TIME=                   | 94.00    | IS=6         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 957.09 | AINCHI= | 944.78 | DELZ= | 12.979 | ALP= | 450.41 | ALPHI= | 446.42 |
| *PARTBN* TIME=                   | 94.00    | IS=7         | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78   | AINCW=  | 957.71 | AINCHI= | 944.78 | DELZ= | 12.929 | ALP= | 450.41 | ALPHI= | 446.64 |

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|          |       |       |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|----------|-------|-------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| •PARTBN• | TIME= | 94.00 | IS=8 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 957.40 | AINCHI= | 944.78 | DELZ= | 12.621 | ALP= | 450.41 | ALPHI= | 446.73 |
| •PARTBN• | TIME= | 94.00 | IS=1 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 958.37 | AINCHI= | 944.78 | DELZ= | 11.592 | ALP= | 450.44 | ALPHI= | 447.05 |
| •PARTBN• | TIME= | 94.00 | IS=2 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 955.64 | AINCHI= | 944.78 | DELZ= | 10.855 | ALP= | 450.46 | ALPHI= | 447.28 |
| •PARTBN• | TIME= | 94.00 | IS=3 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 955.78 | AINCHI= | 944.78 | DELZ= | 11.001 | ALP= | 450.46 | ALPHI= | 447.24 |
| •PARTBN• | TIME= | 94.00 | IS=4 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 956.56 | AINCHI= | 944.78 | DELZ= | 11.776 | ALP= | 450.44 | ALPHI= | 447.00 |
| •PARTBN• | TIME= | 94.00 | IS=5 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 957.51 | AINCHI= | 944.78 | DELZ= | 12.724 | ALP= | 450.41 | ALPHI= | 446.70 |
| •PARTBN• | TIME= | 94.00 | IS=6 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 957.76 | AINCHI= | 944.78 | DELZ= | 12.979 | ALP= | 450.41 | ALPHI= | 446.62 |
| •PARTBN• | TIME= | 94.00 | IS=7 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 957.71 | AINCHI= | 944.78 | DELZ= | 12.929 | ALP= | 450.41 | ALPHI= | 446.64 |
| •PARTBN• | TIME= | 94.00 | IS=8 | ZCALC( 72)= | 959.78 | ZCALC( 71)= | 944.78 | AINCW= | 957.40 | AINCHI= | 944.78 | DELZ= | 12.621 | ALP= | 450.41 | ALPHI= | 446.73 |

IGNITION TIME, TIME (S)

94.000030

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9938847.4     | 2234341.8    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 9971529.1     | 2241888.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 59537.708     | 13384.609    |
| DELIVERED TOTAL IMPULSE (N•S,LBF•S)        | SRMVTI               | .10521061+10  | .23652285+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.35331     | 256.35331    |
| VACUUM TOTAL IMPULSE (N•S,LBF•S)           | SRMVTI               | .11017736+10  | .24768856+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6262559     | 1.6262559    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3934.4981     | 8674.8835    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SDOUTN               | 433.673.82    | 956087.12    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 31.953456     | 70.445312    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 708.39268     | 1561.7385    |
| TOTAL BURN AREA (M••2,IN••2)               | ABTOT                | 240.39309     | 385010.05    |
| TOTAL PROPELLANT VOLUME (M••3,IN••3)       | VF                   | 43.320615     | 2643586.1    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 71873.847     | 158454.71    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1246.6814     | 2748.4619    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1596912     | 1.1596912    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.839424     | 28.306086    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1558.8194     | 5114.2369    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .95413964-01  | .95413964-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M••2,LBF/IN••2)          | PH                   | .39278553+09  | 569.68726    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)   | SPHDT                | .46157951+11  | 66946.449    |
| BURN AREA (M••2,IN••2)                     | AMH                  | 4.9589804     | 7686.4351    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .90286613-02  | .35545911    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .91078790     | 35.857791    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFH                  | .89039337     | 48843.000    |
| GAS VOLUME (M••3,IN••3)                    | VPH                  | 54.303438     | 3313799.1    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3392.5558     | 6106.6005    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RAJIAL BURN AREA (M••2,IN••2)              | ABCYL                | 243.43410     | 377323.62    |
| SEGMENT FACE BURN AREA (M••2,IN••2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFCYL                | 42.518256     | 2594623.2    |
| GAS VOLUME (M••3,IN••3)                    | VP                   | 247.16010     | 15082634.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M••2,LBF/IN••2)  | PON                  | .38630218+09  | 560.28395    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)   | SPONDY               | .43857554+11  | 63610.004    |
| BURN AREA (M••2,IN••2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .90257325-02  | .35534380    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .90178549-02  | .35503523    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M••3,IN••3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3390.9365     | 6103.6857    |
| PORT AREA, NOZ ENT (M••2,IN••2)            | AZA                  | 10.208039     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M••2,IN••2)                   | AT                   | 1.5872514     | 2460.2446    |
| EXPANSION RATIO                            | EPR                  | 6.7717786     | 6.7717786    |
| PRESSURE RATIO                             | PEPO                 | .23258764-01  | .23258764-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37610250-01  | .37610250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANIUPS               | 2.0000000     | 2.0000000    |



## INCREMENT DIVIDING PLANE DATA:

| HAAS<br>REGION | PO     | P      | T       | U      | H    | LP     | AP       | WDOT    | DWDOT  | LB/SEC | DM/DT  | RB     | TAU    | RBTO   | TAUTO |
|----------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|-------|
|                | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE           | 569.69 | 569.68 | 6106.60 | 7.92   | .002 | 405.67 | 13092.66 | 176.95  | 173.26 | -3.69  |        | .3553  | 35.858 | .0000  | .0000 |
| 15.000         | 569.68 | 569.68 | 6106.60 | 14.03  | .004 | 405.94 | 13110.29 | 314.09  | 137.21 | .07    |        | .3553  | 35.816 | .0000  | .0000 |
| 30.000         | 569.67 | 569.67 | 6106.59 | 20.13  | .006 | 406.20 | 13127.89 | 451.32  | 137.30 | .07    |        | .3553  | 35.811 | .0000  | .0000 |
| 45.000         | 569.67 | 569.66 | 6106.58 | 26.22  | .007 | 406.46 | 13145.46 | 588.65  | 137.39 | .07    |        | .3553  | 35.807 | .0000  | .0000 |
| 60.000         | 569.67 | 569.64 | 6106.56 | 32.29  | .009 | 406.73 | 13163.03 | 726.05  | 137.47 | .07    |        | .3552  | 35.802 | .0000  | .0000 |
| 75.000         | 569.66 | 569.62 | 6106.55 | 38.36  | .011 | 406.99 | 13180.51 | 863.55  | 137.56 | .07    |        | .3552  | 35.797 | .0000  | .0000 |
| 90.000         | 569.65 | 569.59 | 6106.53 | 44.41  | .013 | 407.26 | 13197.99 | 1001.13 | 137.65 | .06    |        | .3552  | 35.792 | .0000  | .0000 |
| 105.000        | 569.63 | 569.56 | 6106.50 | 50.46  | .014 | 407.52 | 13215.43 | 1138.80 | 137.74 | .06    |        | .3552  | 35.787 | .0000  | .0000 |
| 116.761        | 569.62 | 569.54 | 6106.48 | 55.19  | .016 | 407.73 | 13229.09 | 1246.81 | 108.05 | .05    |        | .3552  | 35.782 | .0000  | .0000 |
| 116.771        | 569.62 | 569.54 | 6106.48 | 56.29  | .016 | 349.03 | 12969.90 | 1246.81 | .00    | .00    |        | .3552  | 35.783 | .0000  | .0000 |
| 131.771        | 569.60 | 569.50 | 6106.46 | 61.33  | .017 | 381.00 | 13082.57 | 1370.18 | 123.40 | .04    |        | .3552  | 35.783 | .0000  | .0000 |
| 143.919        | 569.59 | 569.47 | 6106.43 | 65.70  | .019 | 406.88 | 13173.97 | 1477.99 | 107.86 | .05    |        | .3552  | 35.775 | .0000  | .0000 |
| 158.919        | 569.56 | 569.43 | 6106.40 | 71.54  | .020 | 407.81 | 13226.91 | 1615.64 | 137.71 | .06    |        | .3552  | 35.769 | .0000  | .0000 |
| 173.919        | 569.54 | 569.38 | 6106.37 | 77.34  | .022 | 408.74 | 13279.61 | 1753.59 | 138.02 | .06    |        | .3552  | 35.763 | .0000  | .0000 |
| 188.919        | 569.52 | 569.33 | 6106.33 | 83.12  | .024 | 409.66 | 13332.08 | 1891.85 | 138.33 | .06    |        | .3552  | 35.757 | .0000  | .0000 |
| 203.919        | 569.49 | 569.28 | 6106.29 | 88.87  | .025 | 410.59 | 13384.30 | 2030.42 | 138.63 | .06    |        | .3552  | 35.751 | .0000  | .0000 |
| 218.919        | 569.46 | 569.22 | 6106.25 | 94.59  | .027 | 411.52 | 13436.30 | 2169.30 | 138.94 | .06    |        | .3551  | 35.745 | .0000  | .0000 |
| 233.919        | 569.43 | 569.16 | 6106.21 | 100.28 | .028 | 412.44 | 13488.05 | 2308.49 | 139.25 | .06    |        | .3551  | 35.739 | .0000  | .0000 |
| 248.919        | 569.39 | 569.10 | 6106.16 | 105.94 | .030 | 413.37 | 13539.56 | 2447.98 | 139.56 | .06    |        | .3551  | 35.732 | .0000  | .0000 |
| 263.919        | 569.36 | 569.03 | 6106.12 | 111.58 | .032 | 414.30 | 13590.04 | 2587.78 | 139.86 | .06    |        | .3551  | 35.726 | .0000  | .0000 |
| 278.919        | 569.32 | 568.96 | 6106.06 | 117.20 | .033 | 415.22 | 13641.88 | 2727.88 | 140.17 | .06    |        | .3551  | 35.719 | .0000  | .0000 |
| 293.919        | 569.28 | 568.88 | 6106.01 | 122.79 | .035 | 416.15 | 13692.68 | 2868.29 | 140.47 | .06    |        | .3550  | 35.713 | .0000  | .0000 |
| 308.919        | 569.24 | 568.80 | 6105.96 | 128.36 | .036 | 417.08 | 13743.25 | 3009.00 | 140.78 | .06    |        | .3550  | 35.706 | .0000  | .0000 |
| 323.919        | 569.20 | 568.72 | 6105.90 | 133.90 | .038 | 418.00 | 13793.58 | 3150.02 | 141.08 | .06    |        | .3550  | 35.699 | .0000  | .0000 |
| 338.919        | 569.15 | 568.63 | 6105.84 | 139.42 | .040 | 418.93 | 13843.67 | 3291.35 | 141.39 | .06    |        | .3550  | 35.692 | .0000  | .0000 |
| 353.919        | 569.10 | 568.55 | 6105.78 | 144.92 | .041 | 419.86 | 13893.52 | 3432.97 | 141.69 | .06    |        | .3550  | 35.685 | .0000  | .0000 |
| 368.919        | 569.05 | 568.45 | 6105.72 | 150.40 | .043 | 420.79 | 13943.14 | 3574.91 | 141.99 | .06    |        | .3549  | 35.677 | .0000  | .0000 |
| 383.919        | 569.00 | 568.36 | 6105.65 | 155.85 | .044 | 421.71 | 13992.52 | 3717.14 | 142.30 | .06    |        | .3549  | 35.670 | .0000  | .0000 |
| 398.919        | 568.95 | 568.26 | 6105.58 | 161.29 | .046 | 422.64 | 14041.66 | 3859.68 | 142.60 | .06    |        | .3549  | 35.663 | .0000  | .0000 |
| 413.919        | 568.93 | 568.23 | 6105.56 | 166.78 | .046 | 422.89 | 14055.14 | 3998.97 | 39.30  | .02    |        | .3549  | 35.655 | .0000  | .0000 |
| 428.919        | 568.88 | 568.13 | 6105.48 | 168.94 | .048 | 421.03 | 14040.39 | 4041.42 | 142.51 | .06    |        | .3548  | 35.653 | .0000  | .0000 |
| 443.919        | 568.85 | 568.06 | 6105.44 | 172.62 | .049 | 419.92 | 14031.72 | 4126.61 | 85.23  | .04    |        | .3548  | 35.646 | .0000  | .0000 |
| 458.919        | 568.85 | 568.19 | 6105.63 | 157.56 | .045 | 114.20 | 15369.71 | 4126.61 | .00    | .00    |        | .3548  | 35.672 | .0000  | .0000 |
| 473.919        | 568.93 | 568.19 | 6105.50 | 167.55 | .048 | 101.53 | 14453.92 | 4126.89 | .00    | .00    |        | .3549  | 35.673 | .0000  | .0000 |
| 488.919        | 569.02 | 568.14 | 6105.30 | 182.54 | .052 | 117.26 | 14396.11 | 4197.72 | 70.73  | .10    |        | .3549  | 35.645 | .0000  | .0000 |
| 503.919        | 569.09 | 568.10 | 6105.18 | 192.43 | .054 | 405.60 | 13091.73 | 4247.71 | 50.00  | .01    |        | .3549  | 35.604 | .0000  | .0000 |
| 518.919        | 569.16 | 568.17 | 6105.10 | 196.03 | .056 | 406.18 | 13130.64 | 4384.75 | 137.11 | .06    |        | .3549  | 35.583 | .0000  | .0000 |
| 533.919        | 569.22 | 568.21 | 6105.01 | 201.61 | .057 | 406.75 | 13169.38 | 4521.98 | 137.29 | .06    |        | .3549  | 35.573 | .0000  | .0000 |
| 548.919        | 569.28 | 568.26 | 6104.92 | 207.17 | .059 | 407.33 | 13207.95 | 4659.38 | 137.47 | .06    |        | .3548  | 35.564 | .0000  | .0000 |
| 563.919        | 569.33 | 568.31 | 6104.83 | 212.72 | .060 | 407.90 | 13246.35 | 4796.98 | 137.65 | .06    |        | .3548  | 35.554 | .0000  | .0000 |
| 578.919        | 569.38 | 568.34 | 6104.74 | 218.25 | .062 | 408.47 | 13284.59 | 4934.75 | 137.84 | .06    |        | .3548  | 35.544 | .0000  | .0000 |
| 593.919        | 569.43 | 568.39 | 6104.64 | 223.76 | .063 | 409.05 | 13322.66 | 5072.70 | 138.02 | .06    |        | .3547  | 35.534 | .0000  | .0000 |
| 608.919        | 569.48 | 568.44 | 6104.54 | 229.26 | .065 | 409.62 | 13360.57 | 5210.84 | 138.20 | .06    |        | .3547  | 35.523 | .0000  | .0000 |
| 623.919        | 569.53 | 568.49 | 6104.44 | 234.74 | .067 | 410.20 | 13398.31 | 5349.15 | 138.38 | .06    |        | .3547  | 35.513 | .0000  | .0000 |
| 638.919        | 569.58 | 568.54 | 6104.34 | 240.20 | .068 | 410.77 | 13435.89 | 5487.64 | 138.56 | .06    |        | .3546  | 35.503 | .0000  | .0000 |
| 653.919        | 569.63 | 568.59 | 6104.24 | 245.65 | .070 | 411.35 | 13473.30 | 5626.32 | 138.74 | .06    |        | .3546  | 35.492 | .0000  | .0000 |

|          |        |        |         |        |      |        |          |         |        |     |       |        |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|------|
| 628.204  | 568.21 | 566.54 | 6104.13 | 251.09 | .071 | 411.92 | 13510.54 | 5765.17 | 138.91 | .06 | .3546 | 35.482 | .000 |
| 643.204  | 568.12 | 566.38 | 6104.02 | 256.51 | .073 | 412.49 | 13547.62 | 5904.20 | 139.09 | .06 | .3545 | 35.471 | .000 |
| 658.204  | 568.03 | 566.21 | 6103.92 | 261.91 | .074 | 413.07 | 13584.53 | 6043.41 | 139.27 | .06 | .3545 | 35.460 | .000 |
| 673.204  | 567.93 | 566.05 | 6103.80 | 267.31 | .076 | 413.64 | 13621.28 | 6182.80 | 139.45 | .06 | .3544 | 35.450 | .000 |
| 688.204  | 567.84 | 565.87 | 6103.69 | 272.68 | .077 | 414.22 | 13657.86 | 6322.37 | 139.63 | .06 | .3544 | 35.439 | .000 |
| 703.204  | 567.74 | 565.70 | 6103.57 | 278.05 | .079 | 414.79 | 13694.27 | 6462.01 | 139.80 | .06 | .3543 | 35.428 | .000 |
| 718.204  | 567.64 | 565.52 | 6103.46 | 283.41 | .080 | 415.37 | 13730.52 | 6602.03 | 139.98 | .06 | .3543 | 35.417 | .000 |
| 728.191  | 567.59 | 565.43 | 6103.39 | 286.25 | .081 | 415.67 | 13749.75 | 6676.61 | 74.61  | .03 | .3543 | 35.406 | .000 |
| 751.191  | 567.46 | 565.24 | 6103.32 | 289.59 | .082 | 417.65 | 13881.34 | 6817.03 | 140.48 | .06 | .3542 | 35.400 | .000 |
| 746.336  | 567.41 | 565.18 | 6103.29 | 290.74 | .082 | 418.33 | 13926.07 | 6865.35 | 48.33  | .02 | .3542 | 35.394 | .000 |
| 746.346  | 567.39 | 565.55 | 6103.88 | 263.84 | .075 | 28.61  | 15337.33 | 6665.35 | .00    | .00 | .3543 | 35.444 | .000 |
| 761.346  | 567.50 | 565.52 | 6103.67 | 273.48 | .078 | 148.56 | 14861.87 | 6875.42 | 29.87  | .21 | .3543 | 35.445 | .000 |
| 776.346  | 567.59 | 565.44 | 6103.41 | 285.46 | .081 | 268.51 | 14384.71 | 6965.85 | 70.31  | .11 | .3543 | 35.420 | .000 |
| 791.346  | 567.68 | 565.30 | 6103.08 | 300.05 | .085 | 388.46 | 13905.84 | 7076.61 | 110.75 | .01 | .3542 | 35.390 | .000 |
| 794.431  | 567.70 | 565.26 | 6102.99 | 303.84 | .086 | 416.33 | 13794.34 | 7108.12 | 31.52  | .01 | .3542 | 35.354 | .000 |
| 804.431  | 567.58 | 565.37 | 6102.87 | 308.47 | .087 | 417.31 | 13869.13 | 7248.58 | 140.52 | .06 | .3542 | 35.349 | .000 |
| 824.431  | 567.46 | 564.87 | 6102.76 | 313.09 | .089 | 418.29 | 13925.40 | 7389.36 | 140.83 | .06 | .3541 | 35.338 | .000 |
| 834.431  | 567.33 | 564.67 | 6102.65 | 317.70 | .090 | 419.27 | 13990.15 | 7530.45 | 141.15 | .06 | .3541 | 35.328 | .000 |
| 854.478  | 567.21 | 564.47 | 6102.53 | 322.28 | .091 | 420.25 | 14054.16 | 7671.38 | 140.99 | .06 | .3541 | 35.318 | .000 |
| 864.781  | 567.03 | 564.27 | 6102.49 | 323.84 | .092 | 424.62 | 14250.85 | 7813.68 | 142.34 | .04 | .3540 | 35.307 | .000 |
| 884.781  | 566.85 | 564.06 | 6102.45 | 325.58 | .092 | 429.09 | 14440.53 | 7957.49 | 143.82 | .00 | .3540 | 35.313 | .000 |
| 894.781  | 566.68 | 563.86 | 6102.40 | 327.51 | .093 | 433.55 | 14623.21 | 8102.88 | 145.36 | .03 | .3542 | 35.317 | .000 |
| 914.791  | 566.51 | 563.65 | 6102.35 | 329.61 | .093 | 438.00 | 14798.87 | 8249.89 | 146.95 | .06 | .3545 | 35.320 | .000 |
| 924.781  | 566.34 | 563.44 | 6102.29 | 331.89 | .094 | 442.45 | 14967.52 | 8398.59 | 148.62 | .09 | .3549 | 35.323 | .000 |
| 944.761  | 566.17 | 563.23 | 6102.22 | 334.35 | .095 | 446.91 | 15129.17 | 8549.09 | 150.37 | .12 | .3557 | 35.326 | .000 |
| 959.781  | 566.04 | 563.06 | 6102.17 | 336.45 | .095 | 450.43 | 15254.15 | 8671.46 | 122.19 | .18 | .3564 | 35.178 | .000 |
| 974.781  | 565.97 | 563.06 | 6102.27 | 332.59 | .094 | .00    | 15431.42 | 8671.52 | .00    | .05 | .3564 | 34.409 | .000 |
| 984.781  | 565.92 | 563.06 | 6102.35 | 329.60 | .093 | .00    | 15735.84 | 8671.53 | .00    | .01 | .3564 | 33.640 | .000 |
| 1004.781 | 565.87 | 563.06 | 6102.42 | 328.80 | .093 | .00    | 15832.24 | 8671.99 | .00    | .22 | .3564 | 32.871 | .000 |
| 1014.781 | 565.83 | 563.06 | 6102.48 | 324.20 | .092 | .00    | 15951.82 | 8672.26 | .00    | .25 | .3564 | 32.101 | .000 |
| 1034.781 | 565.79 | 563.06 | 6102.55 | 321.79 | .091 | .00    | 15997.77 | 8672.38 | .00    | .27 | .3564 | 31.332 | .000 |
| 1040.791 | 565.77 | 563.06 | 6102.57 | 320.87 | .091 | .00    | 15964.84 | 8672.67 | .00    | .27 | .3564 | 31.024 | .000 |
| 1055.791 | 565.78 | 563.06 | 6102.55 | 321.44 | .091 | .00    | 15941.80 | 8672.95 | .00    | .11 | .3564 | 30.483 | .000 |
| 1070.791 | 565.79 | 563.06 | 6102.54 | 322.01 | .091 | .00    | 15916.89 | 8673.21 | .00    | .29 | .3564 | 29.942 | .000 |
| 1084.171 | 565.80 | 563.06 | 6102.53 | 322.53 | .091 | .00    | 15823.73 | 8674.08 | .00    | .26 | .3564 | 29.459 | .000 |
| AFT (A)  | 560.28 | 535.05 | 6065.94 | 992.74 | .282 | .000   | 10413.12 | .34     | .00    | .53 | .3553 | 29.460 | .000 |
| AFT (B)  | 560.28 | 560.28 | 6103.69 | .02    | .000 | .000   | .000     | .00     | .00    | .34 | .3550 | 20.670 | .000 |



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•PARTBN• TIME= 95.00 IS=8 ZCALC( 72)= 959.78 ZCALC( 71)= 944.78 AINCW= 950.51 AINCHI= 944.78 DELZ= 5.731 ALP=450.60 ALPHI=448.96

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                                               |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 9863014.2     | 2217293.8    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 9893250.2     | 2224091.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 60304.153     | 13556.913    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOTI               | .10620074+10  | .23874876+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 256.31070     | 256.31070    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .11117064+10  | .24992154+07 |
| THRUST COEFFICIENT                                              | CF                   | 1.6263878     | 1.6263878    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 3903.6034     | 8605.9723    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 437593.01     | 964727.45    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 32.364801     | 71.352173    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 676.12955     | 1490.6105    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 247.64060     | 382913.69    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 41.041682     | 2504517.1    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 67958.636     | 149818.74    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1238.0604     | 2729.4559    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1596866     | 1.1596866    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.838267     | 28.303535    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1558.7338     | 5113.9560    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .95499416-01  | .95499416-01 |
| HEAD END PARAMETERS:                                            |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .38943530+09  | 564.82816    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .46549077+11  | 67513.729    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | ANH                  | 4.7857462     | 7417.9216    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .90013226-02  | .35438278    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .91980984     | 36.212986    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VPH                  | .75648474     | 46163.531    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 54.347347     | 3316478.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3391.7192     | 6105.0945    |
| CYLINDRICAL SECTION PARAMETERS:                                 |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 242.25485     | 375495.77    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 40.283231     | 2458233.6    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 247.56956     | 15107621.    |
| AFT END PARAMETERS:                                             |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .38304687+09  | 555.56252    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .44242243+11  | 64167.949    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(1+1,1)           | .89990488-02  | .35429326    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(1+2,1)           | .89912263-02  | .35398529    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(1+1,1)          | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(1+2,1)          | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.347463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(1+2,3)          | 3390.1234     | 6102.2222    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                                              |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5880456     | 2461.4757    |
| EXPANSION RATIO                                                 | EPR                  | 6.7683917     | 6.7683917    |
| PRESSURE RATIO                                                  | PEPO                 | .23274322-01  | .23274322-01 |
| MISCELLANEOUS PARAMETERS:                                       |                      |               |              |
| ANTISLOTTIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | RUTO   | TAUTO. |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    |
| FUNE                        | 564.83 | 564.83 | 6105.09 | 7.61   | .002 | 407.91 | 13237.07 | 170.42  | 166.70 | -3.72  | .3542  | 36.213 | .0000  | .000   |
| 15.000                      | 564.83 | 564.82 | 6105.09 | 13.71  | .004 | 408.17 | 13254.79 | 307.91  | 137.55 | .06    | .3542  | 36.171 | .0000  | .000   |
| 30.000                      | 564.82 | 564.81 | 6105.08 | 19.82  | .006 | 408.43 | 13272.49 | 445.49  | 137.64 | .06    | .3542  | 36.166 | .0000  | .000   |
| 45.000                      | 564.82 | 564.80 | 6105.07 | 25.90  | .007 | 408.70 | 13290.15 | 583.15  | 137.72 | .06    | .3542  | 36.162 | .0000  | .000   |
| 60.000                      | 564.81 | 564.78 | 6105.06 | 31.98  | .009 | 408.96 | 13307.78 | 720.90  | 137.81 | .06    | .3542  | 36.157 | .0000  | .000   |
| 75.000                      | 564.80 | 564.76 | 6105.04 | 38.05  | .011 | 409.22 | 13325.38 | 858.74  | 137.90 | .06    | .3542  | 36.152 | .0000  | .000   |
| 90.000                      | 564.79 | 564.74 | 6105.02 | 44.10  | .013 | 409.49 | 13342.95 | 996.66  | 137.98 | .06    | .3542  | 36.147 | .0000  | .000   |
| 105.000                     | 564.77 | 564.71 | 6105.00 | 50.15  | .014 | 409.75 | 13360.49 | 1134.67 | 138.07 | .06    | .3542  | 36.142 | .0000  | .000   |
| 116.761                     | 564.76 | 564.68 | 6104.98 | 54.88  | .016 | 409.96 | 13374.21 | 1242.94 | 108.32 | .05    | .3541  | 36.137 | .0000  | .000   |
| 116.771                     | 564.76 | 564.68 | 6104.97 | 56.05  | .016 | 343.67 | 13093.36 | 1242.94 | .00    | -.00   | .3541  | 36.138 | .0000  | .000   |
| 131.771                     | 564.75 | 564.65 | 6104.95 | 60.98  | .017 | 379.83 | 13217.82 | 1364.84 | 121.93 | .03    | .3541  | 36.138 | .0000  | .000   |
| 143.919                     | 564.73 | 564.62 | 6104.93 | 65.29  | .019 | 409.12 | 13318.79 | 1472.48 | 107.68 | .04    | .3541  | 36.130 | .0000  | .000   |
| 158.919                     | 564.71 | 564.57 | 6104.90 | 71.13  | .020 | 410.25 | 13372.08 | 1610.47 | 138.05 | .06    | .3541  | 36.124 | .0000  | .000   |
| 173.919                     | 564.68 | 564.53 | 6104.86 | 76.94  | .022 | 410.97 | 13425.13 | 1748.76 | 138.35 | .06    | .3541  | 36.118 | .0000  | .000   |
| 188.919                     | 564.66 | 564.48 | 6104.83 | 82.72  | .023 | 411.90 | 13477.93 | 1887.36 | 138.66 | .06    | .3541  | 36.112 | .0000  | .000   |
| 203.919                     | 564.63 | 564.43 | 6104.79 | 88.47  | .025 | 412.82 | 13530.50 | 2026.27 | 138.97 | .06    | .3541  | 36.106 | .0000  | .000   |
| 218.919                     | 564.60 | 564.37 | 6104.75 | 94.19  | .027 | 413.75 | 13582.82 | 2165.48 | 139.27 | .06    | .3541  | 36.100 | .0000  | .000   |
| 233.919                     | 564.57 | 564.31 | 6104.71 | 99.88  | .028 | 414.68 | 13634.91 | 2305.00 | 139.58 | .06    | .3540  | 36.094 | .0000  | .000   |
| 248.919                     | 564.54 | 564.25 | 6104.66 | 105.55 | .030 | 415.60 | 13686.75 | 2444.83 | 139.88 | .06    | .3540  | 36.087 | .0000  | .000   |
| 263.919                     | 564.50 | 564.18 | 6104.61 | 111.20 | .032 | 416.53 | 13738.35 | 2584.96 | 140.19 | .06    | .3540  | 36.081 | .0000  | .000   |
| 278.919                     | 564.47 | 564.11 | 6104.56 | 116.81 | .033 | 417.46 | 13789.72 | 2725.39 | 140.49 | .06    | .3540  | 36.074 | .0000  | .000   |
| 293.919                     | 564.43 | 564.03 | 6104.51 | 122.41 | .035 | 418.38 | 13840.84 | 2866.13 | 140.80 | .06    | .3540  | 36.067 | .0000  | .000   |
| 308.919                     | 564.39 | 563.96 | 6104.46 | 127.98 | .036 | 419.31 | 13891.71 | 3007.18 | 141.10 | .06    | .3539  | 36.060 | .0000  | .000   |
| 323.919                     | 564.34 | 563.87 | 6104.41 | 133.52 | .038 | 420.23 | 13942.35 | 3148.52 | 141.40 | .06    | .3539  | 36.054 | .0000  | .000   |
| 338.919                     | 564.30 | 563.79 | 6104.34 | 139.05 | .039 | 421.16 | 13992.75 | 3290.17 | 141.71 | .06    | .3539  | 36.046 | .0000  | .000   |
| 353.919                     | 564.25 | 563.70 | 6104.28 | 144.55 | .041 | 422.09 | 14042.91 | 3432.13 | 142.01 | .06    | .3539  | 36.039 | .0000  | .000   |
| 368.919                     | 564.20 | 563.61 | 6104.21 | 150.03 | .043 | 423.01 | 14092.82 | 3574.38 | 142.31 | .06    | .3539  | 36.032 | .0000  | .000   |
| 383.919                     | 564.15 | 563.52 | 6104.15 | 155.49 | .044 | 423.94 | 14142.50 | 3716.94 | 142.61 | .06    | .3538  | 36.025 | .0000  | .000   |
| 398.919                     | 564.10 | 563.42 | 6104.08 | 160.93 | .046 | 424.87 | 14191.93 | 3859.80 | 142.92 | .06    | .3538  | 36.017 | .0000  | .000   |
| 403.048                     | 564.08 | 563.39 | 6104.06 | 162.43 | .046 | 425.12 | 14205.49 | 3899.18 | 142.99 | .02    | .3538  | 36.010 | .0000  | .000   |
| 418.048                     | 564.04 | 563.29 | 6103.98 | 168.59 | .048 | 423.26 | 14190.37 | 4041.95 | 142.83 | .05    | .3538  | 36.007 | .0000  | .000   |
| 427.051                     | 564.01 | 563.23 | 6103.93 | 172.27 | .049 | 422.15 | 14180.99 | 4127.34 | 85.42  | .03    | .3537  | 36.001 | .0000  | .000   |
| 427.061                     | 564.00 | 563.33 | 6104.10 | 159.37 | .045 | 130.73 | 15328.29 | 4127.34 | .00    | -.00   | .3538  | 36.027 | .0000  | .000   |
| 442.061                     | 564.08 | 563.33 | 6103.98 | 168.63 | .048 | 92.78  | 14485.90 | 4127.63 | .00    | -.29   | .3538  | 36.027 | .0000  | .000   |
| 457.061                     | 564.16 | 563.28 | 6103.79 | 182.53 | .052 | 316.30 | 13607.02 | 4196.62 | 68.88  | -.11   | .3538  | 35.999 | .0000  | .000   |
| 463.204                     | 564.19 | 563.24 | 6103.68 | 189.89 | .054 | 407.84 | 13235.98 | 4246.55 | 49.94  | .01    | .3538  | 35.958 | .0000  | .000   |
| 478.204                     | 564.12 | 563.12 | 6103.60 | 195.50 | .055 | 408.41 | 13275.10 | 4383.93 | 137.44 | .06    | .3538  | 35.938 | .0000  | .000   |
| 493.204                     | 564.05 | 562.99 | 6103.51 | 201.09 | .057 | 408.98 | 13314.04 | 4521.49 | 137.63 | .06    | .3538  | 35.928 | .0000  | .000   |
| 508.204                     | 563.98 | 562.86 | 6103.42 | 206.65 | .059 | 409.56 | 13352.82 | 4659.24 | 137.81 | .06    | .3538  | 35.918 | .0000  | .000   |
| 523.204                     | 563.91 | 562.73 | 6103.33 | 212.21 | .060 | 410.13 | 13391.43 | 4797.17 | 137.99 | .06    | .3537  | 35.908 | .0000  | .000   |
| 534.204                     | 563.84 | 562.59 | 6103.24 | 217.74 | .062 | 410.71 | 13429.87 | 4935.28 | 138.17 | .06    | .3537  | 35.898 | .0000  | .000   |
| 553.204                     | 563.76 | 562.45 | 6103.14 | 223.26 | .063 | 411.28 | 13468.14 | 5073.57 | 138.35 | .06    | .3537  | 35.888 | .0000  | .000   |
| 568.204                     | 563.68 | 562.31 | 6103.05 | 228.76 | .065 | 411.85 | 13506.24 | 5212.04 | 138.53 | .06    | .3536  | 35.878 | .0000  | .000   |
| 583.204                     | 563.50 | 562.16 | 6102.95 | 234.24 | .066 | 412.43 | 13544.17 | 5350.69 | 138.71 | .06    | .3536  | 35.868 | .0000  | .000   |
| 598.204                     | 563.52 | 562.01 | 6102.85 | 239.71 | .068 | 413.00 | 13581.94 | 5489.52 | 138.89 | .06    | .3536  | 35.857 | .0000  | .000   |
| 613.204                     | 563.44 | 561.86 | 6102.74 | 245.17 | .070 | 413.57 | 13619.53 | 5628.52 | 139.06 | .06    | .3535  | 35.847 | .0000  | .000   |

|          |        |        |         |        |      |        |          |         |        |     |       |        |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|------|
| 628.204  | 563.35 | 561.70 | 6102.64 | 250.61 | .071 | 414.15 | 13656.96 | 5767.71 | 139.24 | .06 | .3535 | 35.836 | .000 |
| 643.204  | 563.26 | 561.54 | 6102.53 | 256.03 | .072 | 414.72 | 13694.22 | 5907.07 | 139.42 | .06 | .3534 | 35.825 | .000 |
| 650.204  | 563.17 | 561.38 | 6102.42 | 261.44 | .074 | 415.30 | 13731.31 | 6046.61 | 139.60 | .06 | .3534 | 35.815 | .000 |
| 673.204  | 563.08 | 561.21 | 6102.31 | 266.84 | .076 | 415.87 | 13768.23 | 6186.33 | 139.77 | .06 | .3534 | 35.804 | .000 |
| 668.204  | 562.99 | 561.04 | 6102.19 | 272.23 | .077 | 416.44 | 13804.98 | 6326.23 | 139.95 | .06 | .3533 | 35.793 | .000 |
| 703.204  | 562.89 | 560.87 | 6102.08 | 277.60 | .079 | 417.02 | 13841.54 | 6466.30 | 140.13 | .05 | .3533 | 35.782 | .000 |
| 718.204  | 562.79 | 560.69 | 6101.96 | 282.96 | .080 | 417.59 | 13877.98 | 6606.55 | 140.37 | .05 | .3532 | 35.771 | .000 |
| 728.191  | 562.74 | 560.63 | 6101.93 | 285.81 | .081 | 417.90 | 13897.30 | 6681.29 | 140.78 | .03 | .3532 | 35.760 | .000 |
| 741.191  | 562.61 | 560.42 | 6101.82 | 289.17 | .082 | 419.88 | 14029.57 | 6822.04 | 140.80 | .05 | .3532 | 35.754 | .000 |
| 746.336  | 562.56 | 560.36 | 6101.79 | 290.32 | .082 | 420.56 | 14074.53 | 6870.47 | 140.44 | .02 | .3531 | 35.748 | .000 |
| 744.346  | 562.55 | 560.34 | 6102.32 | 266.15 | .075 | 14.15  | 15344.90 | 6870.47 | .00    | .00 | .3532 | 35.798 | .000 |
| 781.346  | 562.66 | 560.66 | 6102.14 | 274.90 | .078 | 139.26 | 14912.63 | 6896.47 | 25.78  | .22 | .3532 | 35.799 | .000 |
| 771.346  | 562.73 | 560.59 | 6101.89 | 285.96 | .081 | 264.38 | 14478.82 | 6964.43 | 67.84  | .12 | .3532 | 35.774 | .000 |
| 771.346  | 562.80 | 560.45 | 6101.58 | 299.54 | .085 | 389.49 | 14643.47 | 7074.34 | 109.89 | .02 | .3532 | 35.744 | .000 |
| 744.831  | 562.81 | 560.41 | 6101.50 | 303.08 | .086 | 418.56 | 13942.10 | 7105.88 | 31.55  | .01 | .3531 | 35.708 | .000 |
| 809.831  | 562.69 | 560.22 | 6101.39 | 307.72 | .087 | 419.54 | 14000.23 | 7246.67 | 140.84 | .05 | .3531 | 35.702 | .000 |
| 824.831  | 562.57 | 560.02 | 6101.27 | 312.35 | .089 | 420.52 | 14073.83 | 7387.77 | 141.15 | .05 | .3531 | 35.692 | .000 |
| 834.831  | 562.45 | 559.82 | 6101.16 | 316.97 | .090 | 421.50 | 14138.90 | 7529.19 | 141.47 | .05 | .3530 | 35.682 | .000 |
| 851.781  | 562.33 | 559.63 | 6101.05 | 321.57 | .091 | 422.48 | 14203.23 | 7670.44 | 141.30 | .05 | .3530 | 35.672 | .000 |
| 867.781  | 562.16 | 559.42 | 6101.00 | 323.51 | .092 | 426.84 | 14385.31 | 7813.06 | 142.66 | .03 | .3530 | 35.661 | .000 |
| 884.781  | 561.99 | 559.22 | 6100.94 | 325.63 | .092 | 431.31 | 14560.82 | 7957.21 | 144.15 | .00 | .3530 | 35.666 | .000 |
| 899.781  | 561.83 | 559.02 | 6100.88 | 327.90 | .093 | 435.77 | 14729.79 | 8132.95 | 145.70 | .03 | .3532 | 35.671 | .000 |
| 914.781  | 561.66 | 558.81 | 6100.82 | 330.34 | .094 | 440.23 | 14892.20 | 8250.34 | 147.32 | .00 | .3536 | 35.674 | .000 |
| 929.781  | 561.50 | 558.60 | 6100.75 | 332.95 | .094 | 444.68 | 15048.05 | 8399.47 | 149.04 | .00 | .3542 | 35.677 | .000 |
| 944.781  | 561.34 | 558.39 | 6100.68 | 335.73 | .095 | 449.14 | 15197.36 | 8550.43 | 150.84 | .12 | .3550 | 35.681 | .000 |
| 959.781  | 561.28 | 558.32 | 6100.65 | 336.73 | .095 | 450.61 | 15247.35 | 8602.97 | 52.32  | .22 | .3553 | 35.178 | .000 |
| 974.781  | 561.19 | 558.32 | 6100.78 | 331.76 | .094 | .00    | 15476.30 | 8603.21 | .00    | .24 | .3553 | 34.409 | .000 |
| 989.781  | 561.15 | 558.32 | 6100.86 | 327.02 | .093 | .00    | 15605.94 | 8603.41 | .00    | .20 | .3553 | 33.640 | .000 |
| 1004.781 | 561.06 | 558.32 | 6100.92 | 326.45 | .093 | .00    | 15729.03 | 8603.63 | .00    | .22 | .3553 | 32.871 | .000 |
| 1019.781 | 561.02 | 558.32 | 6100.98 | 324.07 | .092 | .00    | 15845.56 | 8603.88 | .00    | .25 | .3553 | 32.101 | .000 |
| 1034.781 | 561.02 | 558.32 | 6101.04 | 321.85 | .091 | .00    | 15955.54 | 8604.15 | .00    | .27 | .3553 | 31.332 | .000 |
| 1049.781 | 561.01 | 558.32 | 6101.06 | 321.00 | .091 | .00    | 15997.77 | 8604.26 | .00    | .11 | .3553 | 31.024 | .000 |
| 1055.791 | 561.02 | 558.32 | 6101.05 | 321.57 | .091 | .00    | 15969.84 | 8604.55 | .00    | .29 | .3553 | 30.483 | .000 |
| 1070.791 | 561.03 | 558.32 | 6101.03 | 322.15 | .091 | .00    | 15941.80 | 8604.84 | .00    | .29 | .3553 | 29.942 | .000 |
| 1084.791 | 561.04 | 558.32 | 6101.02 | 322.67 | .092 | .00    | 15916.69 | 8605.10 | .00    | .26 | .3553 | 29.459 | .000 |
| AFT(A)   | 555.56 | 530.52 | 6064.44 | 993.20 | .283 | .0000  | 15823.73 | 8605.97 | .00    | .53 | .3543 | 29.460 | .000 |
| AFT(d)   | 555.56 | 555.56 | 6102.22 | .02    | .000 | .0000  | 10413.12 | .34     | .00    | .34 | .3540 | 20.670 | .000 |







|          |      |   |       |     |   |        |     |   |        |        |     |   |        |        |        |         |        |       |        |      |        |        |        |
|----------|------|---|-------|-----|---|--------|-----|---|--------|--------|-----|---|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN* | TIME | = | 96.00 | IS= | 8 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 943.64 | AINCHI= | 929.78 | DELZ= | 13.863 | ALP= | 450.78 | ALPHI= | 446.73 |
| *PARTBN* | TIME | = | 96.00 | IS= | 1 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 942.59 | AINCHI= | 929.78 | DELZ= | 12.810 | ALP= | 450.81 | ALPHI= | 447.05 |
| *PARTBN* | TIME | = | 96.00 | IS= | 2 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 941.84 | AINCHI= | 929.78 | DELZ= | 12.062 | ALP= | 450.83 | ALPHI= | 447.28 |
| *PARTBN* | TIME | = | 96.00 | IS= | 3 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 941.99 | AINCHI= | 929.78 | DELZ= | 12.208 | ALP= | 450.82 | ALPHI= | 447.24 |
| *PARTBN* | TIME | = | 96.00 | IS= | 4 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 942.79 | AINCHI= | 929.78 | DELZ= | 13.007 | ALP= | 450.80 | ALPHI= | 447.00 |
| *PARTBN* | TIME | = | 96.00 | IS= | 5 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 943.75 | AINCHI= | 929.78 | DELZ= | 13.968 | ALP= | 450.78 | ALPHI= | 446.70 |
| *PARTBN* | TIME | = | 96.00 | IS= | 6 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 944.01 | AINCHI= | 929.78 | DELZ= | 14.229 | ALP= | 450.77 | ALPHI= | 446.61 |
| *PARTBN* | TIME | = | 96.00 | IS= | 7 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 943.96 | AINCHI= | 929.78 | DELZ= | 14.178 | ALP= | 450.77 | ALPHI= | 446.63 |
| *PARTBN* | TIME | = | 96.00 | IS= | 8 | ZCALC( | 71) | = | 944.78 | ZCALC( | 70) | = | 929.78 | AINCW= | 943.64 | AINCHI= | 929.78 | DELZ= | 13.863 | ALP= | 450.78 | ALPHI= | 446.73 |

IGNITION TIME, TIME (S)

96.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM<br>NUMERCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|-------------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                         |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                   | 9779456.0     | 2198509.2    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                   | 9807246.8     | 2204756.7    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                      | 61013.750     | 13716.437    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI                  | .13718294*10  | .24095684*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                    | 256.25834     | 256.25834    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI                  | .11215574*10  | .25213614*09 |
| THRUST COEFFICIENT                         | CF                      | 1.6265221     | 1.6265221    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                    | 3869.3037     | 8531.4569    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN                  | 441400.00     | 973296.80    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                     | 32.745637     | 72.191772    |
| INERT MASS REMAINING (KG,LBM)              | MIR                     | 643.47678     | 1418.6235    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                   | 245.51532     | 380549.50    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                      | 38.956689     | 2377283.0    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                      | 64072.426     | 141255.52    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOY                   | 1242.9607     | 2740.2593    |
| RATIO OF SPECIFIC HEATS                    | GAM                     | 1.1596816     | 1.1596816    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                     | 12.837008     | 28.300758    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                   | 1558.6404     | 5113.6497    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                    | .95529100-01  | .95529100-01 |
| <b>HEAD END PARAMETERS:</b>                |                         |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                      | .38578880*09  | 559.53935    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                   | .46936718*11  | 68075.955    |
| BURN AREA (M**2,IN**2)                     | AHH                     | 4.6080643     | 7142.5140    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)                  | .89714242-02  | .35320568    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)                 | .92880394     | 36.567084    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                     | .71429772     | 43589.121    |
| GAS VOLUME (M**3,IN**3)                    | VPH                     | 54.389534     | 3319053.0    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)               | 3390.8084     | 6103.4551    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                         |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                   | 240.90725     | 373406.99    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT                  | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                   | 38.240426     | 2333574.0    |
| GAS VOLUME (M**3,IN**3)                    | VP                      | 251.76305     | 15363524.    |
| <b>AFT END PARAMETERS:</b>                 |                         |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                     | .37949716*09  | 550.41411    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT                  | .44623545*11  | 64720.980    |
| BURN AREA (M**2,IN**2)                     | AAN                     | .30000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)             | .89697829-02  | .35314106    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)             | .89619773-02  | .35283376    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)            | .74628400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)            | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                     | .19662722-02  | .119.98929   |
| GAS VOLUME (M**3,IN**3)                    | VPN                     | 17.047463     | 1040309.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)            | 3389.2368     | 6106.6263    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                     | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                         |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                      | 1.5888342     | 2462.6980    |
| EXPANSION RATIO                            | EPR                     | 6.7650324     | 6.7650324    |
| PRESSURE RATIO                             | PEPO                    | .23289795-01  | .23289795-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                         |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                   | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS                  | 2.0000000     | 2.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY



|          |        |        |         |        |      |        |          |         |        |     |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|-------|
| 628.204  | 558.06 | 556.44 | 6101.00 | 250.40 | .071 | 416.37 | 13803.71 | 5766.69 | 139.52 | .02 | .3523 | 36.189 | .0000 | .0000 |
| 643.204  | 557.97 | 556.28 | 6100.90 | 255.64 | .072 | 416.94 | 13841.15 | 5906.36 | 139.70 | .02 | .3523 | 36.179 | .0000 | .0000 |
| 658.204  | 557.89 | 556.12 | 6100.79 | 261.06 | .074 | 417.51 | 13878.41 | 6046.21 | 139.87 | .02 | .3522 | 36.168 | .0000 | .0000 |
| 673.204  | 557.79 | 555.95 | 6100.68 | 266.47 | .076 | 418.09 | 13915.51 | 6186.24 | 140.05 | .02 | .3522 | 36.157 | .0000 | .0000 |
| 688.204  | 557.70 | 555.78 | 6100.56 | 271.86 | .077 | 418.66 | 13952.43 | 6326.44 | 140.23 | .02 | .3521 | 36.146 | .0000 | .0000 |
| 703.204  | 557.61 | 555.61 | 6100.45 | 277.24 | .079 | 419.23 | 13989.18 | 6466.82 | 140.40 | .02 | .3521 | 36.135 | .0000 | .0000 |
| 718.204  | 557.51 | 555.44 | 6100.33 | 282.61 | .080 | 419.81 | 14025.76 | 6607.38 | 140.58 | .02 | .3521 | 36.124 | .0000 | .0000 |
| 733.204  | 557.46 | 555.34 | 6100.26 | 285.47 | .081 | 420.11 | 14045.17 | 6682.29 | 74.92  | .01 | .3520 | 36.113 | .0000 | .0000 |
| 748.204  | 557.33 | 555.16 | 6100.19 | 288.85 | .082 | 422.09 | 14178.12 | 6823.34 | 141.08 | .02 | .3520 | 36.107 | .0000 | .0000 |
| 763.204  | 557.28 | 555.10 | 6100.16 | 290.01 | .082 | 422.78 | 14223.31 | 6871.87 | 48.54  | .01 | .3519 | 36.101 | .0000 | .0000 |
| 778.204  | 557.27 | 555.40 | 6100.63 | 288.66 | .076 | 437.16 | 14959.68 | 6892.70 | 20.57  | .00 | .3520 | 36.151 | .0000 | .0000 |
| 793.204  | 557.36 | 555.38 | 6100.46 | 276.45 | .078 | 427.16 | 14959.68 | 6892.70 | 20.57  | .00 | .3520 | 36.152 | .0000 | .0000 |
| 808.204  | 557.43 | 555.30 | 6100.24 | 286.52 | .081 | 428.69 | 14971.03 | 6957.49 | 64.63  | .01 | .3520 | 36.127 | .0000 | .0000 |
| 823.204  | 557.49 | 555.17 | 6099.95 | 299.06 | .085 | 430.22 | 14980.99 | 7066.25 | 108.69 | .06 | .3520 | 36.097 | .0000 | .0000 |
| 838.204  | 557.50 | 555.13 | 6099.88 | 302.35 | .086 | 430.78 | 14990.18 | 7097.80 | 31.56  | .00 | .3520 | 36.061 | .0000 | .0000 |
| 853.204  | 557.38 | 554.94 | 6099.76 | 307.01 | .087 | 431.76 | 14956.65 | 7238.90 | 141.11 | .02 | .3519 | 36.055 | .0000 | .0000 |
| 868.204  | 557.26 | 554.74 | 6099.65 | 311.66 | .088 | 432.74 | 14922.58 | 7380.30 | 141.43 | .02 | .3519 | 36.045 | .0000 | .0000 |
| 883.204  | 557.14 | 554.55 | 6099.54 | 316.30 | .090 | 433.72 | 14887.98 | 7522.02 | 141.74 | .02 | .3518 | 36.035 | .0000 | .0000 |
| 898.204  | 557.02 | 554.35 | 6099.42 | 320.90 | .091 | 434.69 | 14852.63 | 7663.58 | 141.57 | .02 | .3518 | 36.024 | .0000 | .0000 |
| 913.204  | 556.86 | 554.15 | 6099.36 | 323.23 | .092 | 435.66 | 14820.05 | 7806.51 | 142.93 | .00 | .3518 | 36.014 | .0000 | .0000 |
| 928.204  | 556.70 | 553.95 | 6099.30 | 325.71 | .092 | 436.53 | 14781.37 | 7950.99 | 144.44 | .00 | .3520 | 36.019 | .0000 | .0000 |
| 943.204  | 556.54 | 553.75 | 6099.23 | 328.35 | .093 | 437.99 | 14836.60 | 8097.08 | 146.02 | .07 | .3522 | 36.024 | .0000 | .0000 |
| 958.204  | 556.38 | 553.54 | 6099.16 | 331.13 | .094 | 442.45 | 14985.73 | 8244.85 | 147.67 | .10 | .3527 | 36.027 | .0000 | .0000 |
| 973.204  | 556.22 | 553.34 | 6099.09 | 334.07 | .095 | 446.91 | 15128.76 | 8394.39 | 149.42 | .13 | .3534 | 36.031 | .0000 | .0000 |
| 988.204  | 556.08 | 553.15 | 6099.01 | 336.80 | .096 | 450.80 | 15250.51 | 8526.43 | 133.88 | .16 | .3542 | 35.948 | .0000 | .0000 |
| 1003.204 | 555.93 | 552.93 | 6098.93 | 339.61 | .095 | .00    | 15396.53 | 8528.42 | .00    | .01 | .3542 | 35.178 | .0000 | .0000 |
| 1018.204 | 555.78 | 552.78 | 6098.85 | 342.43 | .094 | .00    | 15521.27 | 8528.37 | .00    | .05 | .3542 | 34.409 | .0000 | .0000 |
| 1033.204 | 555.62 | 552.62 | 6098.77 | 345.25 | .093 | .00    | 15639.92 | 8528.60 | .00    | .23 | .3542 | 33.640 | .0000 | .0000 |
| 1048.204 | 555.46 | 552.46 | 6098.69 | 348.07 | .092 | .00    | 15752.47 | 8528.86 | .00    | .26 | .3542 | 32.871 | .0000 | .0000 |
| 1063.204 | 555.30 | 552.30 | 6098.61 | 350.89 | .092 | .00    | 15858.92 | 8529.13 | .00    | .28 | .3542 | 32.101 | .0000 | .0000 |
| 1078.204 | 555.14 | 552.14 | 6098.53 | 353.71 | .091 | .00    | 15959.27 | 8529.44 | .00    | .30 | .3542 | 31.332 | .0000 | .0000 |
| 1093.204 | 554.98 | 551.98 | 6098.45 | 356.53 | .091 | .00    | 15997.77 | 8529.56 | .00    | .13 | .3542 | 31.024 | .0000 | .0000 |
| 1108.204 | 554.82 | 551.82 | 6098.37 | 359.35 | .091 | .00    | 15969.84 | 8529.88 | .00    | .32 | .3542 | 30.483 | .0000 | .0000 |
| 1123.204 | 554.66 | 551.66 | 6098.29 | 362.17 | .091 | .00    | 15941.80 | 8530.20 | .00    | .32 | .3542 | 29.942 | .0000 | .0000 |
| 1138.204 | 554.50 | 551.50 | 6098.21 | 364.99 | .092 | .00    | 15916.89 | 8530.49 | .00    | .29 | .3542 | 29.459 | .0000 | .0000 |
| 1153.204 | 554.34 | 551.34 | 6098.13 | 367.81 | .092 | .00    | 15823.73 | 8531.46 | .00    | .59 | .3531 | 29.460 | .0000 | .0000 |
| 1168.204 | 554.18 | 551.18 | 6098.05 | 370.63 | .090 | .00    | 15700.12 | .38     | .00    | .38 | .3528 | 20.670 | .0000 | .0000 |

| SLOT                                    |      | PO        | P                | T         | U           | AP        | DWDOT  | AB      | RB      | DELTA<br>TAU | MSLOT     |        |            |              |
|-----------------------------------------|------|-----------|------------------|-----------|-------------|-----------|--------|---------|---------|--------------|-----------|--------|------------|--------------|
| INTERFACE<br>LOCATION                   |      |           |                  |           |             |           |        |         |         |              |           |        |            |              |
| IN.                                     |      | PSIA      | PSIA             | DEG. R    | FT/SEC      | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC  | IN.          | LB/SEC    |        |            |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.2475-04 |      |           |                  |           |             |           |        |         |         |              |           |        |            |              |
| FOREWARD                                |      | 1.1676+02 | 5.5948+02        | 5.5948+02 | 4.4865+01   | 1.6460+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000       | 1.2392+03 |        |            |              |
| AFT                                     |      | 1.1677+02 | 5.5947+02        | 5.5939+02 | 4.4866+01   | 1.6460+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000       | 1.2392+03 |        |            |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.2340-04 |      |           |                  |           |             |           |        |         |         |              |           |        |            |              |
| FOREWARD                                |      | 4.2705+02 | 5.5873+02        | 5.5796+02 | 1.5041+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000       | 4.1248+03 |        |            |              |
| AFT                                     |      | 4.2706+02 | 5.5882+02        | 5.5805+02 | 1.5039+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000       | 4.1248+03 |        |            |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.2345-04 |      |           |                  |           |             |           |        |         |         |              |           |        |            |              |
| FOREWARD                                |      | 7.4634+02 | 5.5728+02        | 5.5510+02 | 2.5178+02   | 1.6382+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000       | 6.8719+03 |        |            |              |
| AFT                                     |      | 7.4635+02 | 5.5758+02        | 5.5540+02 | 2.5167+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000       | 6.8719+03 |        |            |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.2345-04 |      |           |                  |           |             |           |        |         |         |              |           |        |            |              |
| PARTIAL                                 | TIME | 96.50     | 15=1 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 939.16  | AINCHI= | 929.78       | DELZ=     | 9.383  | ALP=450.90 | ALPHI=448.17 |
| PARTIAL                                 | TIME | 96.50     | 15=2 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 938.41  | AINCHI= | 929.78       | DELZ=     | 8.632  | ALP=450.92 | ALPHI=448.40 |
| PARTIAL                                 | TIME | 96.50     | 15=3 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 938.56  | AINCHI= | 929.78       | DELZ=     | 8.780  | ALP=450.92 | ALPHI=448.36 |
| PARTIAL                                 | TIME | 96.50     | 15=4 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 939.36  | AINCHI= | 929.78       | DELZ=     | 9.581  | ALP=450.89 | ALPHI=446.11 |
| PARTIAL                                 | TIME | 96.50     | 15=5 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.33  | AINCHI= | 929.78       | DELZ=     | 10.545 | ALP=450.87 | ALPHI=447.81 |
| PARTIAL                                 | TIME | 96.50     | 15=6 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.59  | AINCHI= | 929.78       | DELZ=     | 10.807 | ALP=450.86 | ALPHI=447.72 |
| PARTIAL                                 | TIME | 96.50     | 15=7 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.54  | AINCHI= | 929.78       | DELZ=     | 10.756 | ALP=450.86 | ALPHI=447.74 |
| PARTIAL                                 | TIME | 96.50     | 15=8 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.22  | AINCHI= | 929.78       | DELZ=     | 10.440 | ALP=450.87 | ALPHI=447.84 |
| PARTIAL                                 | TIME | 96.50     | 15=1 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 939.16  | AINCHI= | 929.78       | DELZ=     | 9.383  | ALP=450.90 | ALPHI=448.17 |
| PARTIAL                                 | TIME | 96.50     | 15=2 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 938.41  | AINCHI= | 929.78       | DELZ=     | 8.632  | ALP=450.92 | ALPHI=448.40 |
| PARTIAL                                 | TIME | 96.50     | 15=3 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 938.56  | AINCHI= | 929.78       | DELZ=     | 8.780  | ALP=450.92 | ALPHI=448.36 |
| PARTIAL                                 | TIME | 96.50     | 15=4 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 939.36  | AINCHI= | 929.78       | DELZ=     | 9.581  | ALP=450.89 | ALPHI=448.11 |
| PARTIAL                                 | TIME | 96.50     | 15=5 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.33  | AINCHI= | 929.78       | DELZ=     | 10.545 | ALP=450.87 | ALPHI=447.81 |
| PARTIAL                                 | TIME | 96.50     | 15=6 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.59  | AINCHI= | 929.78       | DELZ=     | 10.807 | ALP=450.86 | ALPHI=447.72 |
| PARTIAL                                 | TIME | 96.50     | 15=7 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.54  | AINCHI= | 929.78       | DELZ=     | 10.756 | ALP=450.86 | ALPHI=447.74 |
| PARTIAL                                 | TIME | 96.50     | 15=8 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 940.22  | AINCHI= | 929.78       | DELZ=     | 10.440 | ALP=450.87 | ALPHI=447.84 |
| PARTIAL                                 | TIME | 97.00     | 15=1 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 935.74  | AINCHI= | 929.78       | DELZ=     | 5.960  | ALP=450.99 | ALPHI=449.28 |
| PARTIAL                                 | TIME | 97.00     | 15=2 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 934.99  | AINCHI= | 929.78       | DELZ=     | 5.206  | ALP=451.01 | ALPHI=449.52 |
| PARTIAL                                 | TIME | 97.00     | 15=3 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 935.14  | AINCHI= | 929.78       | DELZ=     | 5.354  | ALP=451.01 | ALPHI=449.47 |
| PARTIAL                                 | TIME | 97.00     | 15=4 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 935.94  | AINCHI= | 929.78       | DELZ=     | 6.159  | ALP=450.98 | ALPHI=449.22 |
| PARTIAL                                 | TIME | 97.00     | 15=5 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 936.91  | AINCHI= | 929.78       | DELZ=     | 7.127  | ALP=450.96 | ALPHI=448.91 |
| PARTIAL                                 | TIME | 97.00     | 15=6 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 937.17  | AINCHI= | 929.78       | DELZ=     | 7.390  | ALP=450.95 | ALPHI=448.82 |
| PARTIAL                                 | TIME | 97.00     | 15=7 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 937.12  | AINCHI= | 929.78       | DELZ=     | 7.339  | ALP=450.95 | ALPHI=448.84 |
| PARTIAL                                 | TIME | 97.00     | 15=8 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 936.80  | AINCHI= | 929.78       | DELZ=     | 7.021  | ALP=450.94 | ALPHI=448.94 |
| PARTIAL                                 | TIME | 97.00     | 15=1 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 935.74  | AINCHI= | 929.78       | DELZ=     | 5.960  | ALP=450.99 | ALPHI=449.28 |
| PARTIAL                                 | TIME | 97.00     | 15=2 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 934.99  | AINCHI= | 929.78       | DELZ=     | 5.206  | ALP=451.01 | ALPHI=449.52 |
| PARTIAL                                 | TIME | 97.00     | 15=3 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 935.14  | AINCHI= | 929.78       | DELZ=     | 5.354  | ALP=451.01 | ALPHI=449.47 |
| PARTIAL                                 | TIME | 97.00     | 15=4 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 935.94  | AINCHI= | 929.78       | DELZ=     | 6.159  | ALP=450.98 | ALPHI=449.22 |
| PARTIAL                                 | TIME | 97.00     | 15=5 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 936.91  | AINCHI= | 929.78       | DELZ=     | 7.127  | ALP=450.96 | ALPHI=448.91 |
| PARTIAL                                 | TIME | 97.00     | 15=6 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 937.17  | AINCHI= | 929.78       | DELZ=     | 7.390  | ALP=450.95 | ALPHI=448.82 |
| PARTIAL                                 | TIME | 97.00     | 15=7 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 937.12  | AINCHI= | 929.78       | DELZ=     | 7.339  | ALP=450.95 | ALPHI=448.84 |
| PARTIAL                                 | TIME | 97.00     | 15=8 ZCALC( 71)= | 944.78    | ZCALC( 70)= | 929.78    | AINCW= | 936.80  | AINCHI= | 929.78       | DELZ=     | 7.021  | ALP=450.94 | ALPHI=448.94 |

•PARTBN• TIME= 97.00 IS=8 ZCALC( 71)= 944.78 ZCALC( 70)= 929.78 AINCW= 936.80 AINCHI= 929.78 DELZ= 7.021 ALP=450.96 ALPHI=448.94

DATE 071076

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IGNITION TIME, TIME (S)

97.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                          |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9689584.4     | 2178305.2    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 9715577.7     | 2184148.8    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 61666.167     | 13863.106    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .10815641*10  | .24314529*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.20978     | 256.20978    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .11313190*10  | .25433064*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6266575     | 1.6266575    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3033.7091     | 8451.8618    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 445331.84     | 981788.65    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 33.095784     | 72.963715    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 610.46758     | 1345.8506    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 243.90038     | 378046.36    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 36.680778     | 2238398.4    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 60224.405     | 132772.09    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1232.5483     | 2717.3038    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1596762     | 1.1596762    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.835674     | 28.297818    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1558.5414     | 5113.3249    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .95485553-01  | .95485553-01 |
| HEAD END PARAMETERS:                       |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .38192797*09  | 553.93969    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .47320584*11  | 68632.705    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 4.4309876     | 6868.0446    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .89395911*02  | .35195241    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .93776748     | 36.919960    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .67384184     | 41120.352    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.429990     | 3321521.8    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3389.7441     | 6101.7193    |
| CYLINDRICAL SECTION PARAMETERS:            |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 239.46940     | 371178.31    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 36.604970     | 2197158.1    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 252.18308     | 15389156.    |
| AFT END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .37573369*09  | 544.95565    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .45001168*11  | 65268.676    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .89385584*02  | .35191175    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .89307720*02  | .35160520    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828403     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52561800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722*02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3388.2968     | 6098.9343    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                         |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5896166     | 2463.9166    |
| EXPANSION RATIO                            | EPR                  | 6.7617030     | 6.7617030    |
| PRESSURE RATIO                             | PEPO                 | .23305170-01  | .23305170-01 |
| MISCELLANEOUS PARAMETERS:                  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |



## INCHMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA    | DEG. R | T    | U      | M        | LP      | INCHES | SG. IN. | WDOT   | DWDOT  | DW/DT  | RB     | TAU  | IN/SEC | RBTO | TAUTO. |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|---------|--------|--------|--------|--------|------|--------|------|--------|
|                             | PSIA   |        |         |        |      | FT/SEC |          |         |        |         | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC |      | IN.    |
| FORE                        | 553.94 | 553.94 | 6101.72 | 7.01   | .002 | 412.36 | 13526.86 | 157.63  | 153.28 | -4.34   | .3517  | 36.920 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 15.000                      | 553.94 | 553.93 | 6101.71 | 13.14  | .004 | 412.62 | 13544.78 | 295.71  | 138.09 | .02     | .3517  | 36.878 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 30.000                      | 553.93 | 553.92 | 6101.71 | 19.25  | .005 | 412.88 | 13562.66 | 433.87  | 138.18 | .01     | .3517  | 36.873 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 45.000                      | 553.93 | 553.91 | 6101.70 | 25.35  | .007 | 413.14 | 13580.50 | 572.12  | 138.27 | .01     | .3517  | 36.868 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 60.000                      | 553.92 | 553.90 | 6101.68 | 31.44  | .009 | 413.41 | 13598.31 | 710.46  | 138.35 | .01     | .3517  | 36.864 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 75.000                      | 553.91 | 553.88 | 6101.67 | 37.52  | .011 | 413.67 | 13616.09 | 848.80  | 138.44 | .01     | .3517  | 36.859 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 90.000                      | 553.90 | 553.85 | 6101.65 | 43.59  | .012 | 413.93 | 13633.84 | 987.39  | 138.52 | .01     | .3517  | 36.854 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 105.000                     | 553.89 | 553.83 | 6101.62 | 49.64  | .014 | 414.19 | 13651.56 | 1125.98 | 138.61 | .01     | .3517  | 36.848 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 116.761                     | 553.88 | 553.80 | 6101.61 | 54.38  | .015 | 414.40 | 13665.42 | 1234.71 | 138.74 | .01     | .3517  | 36.843 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 116.771                     | 553.88 | 553.80 | 6101.60 | 55.77  | .016 | 413.71 | 13325.58 | 1234.71 | .00    | .00     | .3517  | 36.844 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 131.771                     | 553.86 | 553.77 | 6101.58 | 60.22  | .017 | 368.89 | 13482.29 | 1348.98 | 114.24 | .03     | .3517  | 36.844 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 143.919                     | 553.84 | 553.74 | 6101.56 | 64.36  | .018 | 413.57 | 13609.40 | 1455.04 | 106.06 | .00     | .3517  | 36.837 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 156.919                     | 553.82 | 553.70 | 6101.53 | 70.21  | .020 | 414.50 | 13663.39 | 1593.61 | 138.59 | .01     | .3517  | 36.831 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 173.919                     | 553.80 | 553.65 | 6101.49 | 76.04  | .022 | 415.42 | 13717.12 | 1732.49 | 138.89 | .01     | .3517  | 36.825 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 186.919                     | 553.78 | 553.60 | 6101.46 | 81.83  | .023 | 416.35 | 13770.61 | 1871.67 | 139.20 | .01     | .3517  | 36.819 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 203.919                     | 553.75 | 553.55 | 6101.42 | 87.60  | .025 | 417.27 | 13823.85 | 2011.16 | 139.50 | .01     | .3516  | 36.813 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 216.919                     | 553.72 | 553.50 | 6101.38 | 93.34  | .026 | 418.20 | 13876.84 | 2150.95 | 139.80 | .01     | .3516  | 36.806 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 233.919                     | 553.69 | 553.44 | 6101.34 | 99.05  | .020 | 419.12 | 13929.58 | 2291.04 | 140.11 | .01     | .3516  | 36.800 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 248.919                     | 553.66 | 553.38 | 6101.29 | 104.74 | .030 | 420.05 | 13982.08 | 2431.44 | 140.41 | .01     | .3516  | 36.794 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 263.919                     | 553.63 | 553.31 | 6101.24 | 110.40 | .031 | 420.97 | 14034.33 | 2572.14 | 140.71 | .01     | .3516  | 36.787 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 278.919                     | 553.59 | 553.24 | 6101.19 | 116.04 | .033 | 421.90 | 14086.33 | 2713.14 | 141.01 | .01     | .3516  | 36.780 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 293.919                     | 553.55 | 553.17 | 6101.14 | 121.65 | .034 | 422.82 | 14138.08 | 2854.44 | 141.31 | .01     | .3515  | 36.774 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 308.919                     | 553.51 | 553.09 | 6101.09 | 127.23 | .036 | 423.75 | 14189.58 | 2996.05 | 141.62 | .01     | .3515  | 36.767 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 323.919                     | 553.47 | 553.01 | 6101.03 | 132.80 | .038 | 424.68 | 14240.83 | 3137.96 | 141.92 | .01     | .3515  | 36.760 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 338.919                     | 553.43 | 552.93 | 6100.97 | 138.34 | .039 | 425.60 | 14291.84 | 3280.17 | 142.22 | .01     | .3515  | 36.752 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 353.919                     | 553.38 | 552.85 | 6100.91 | 143.86 | .041 | 426.53 | 14342.60 | 3422.68 | 142.52 | .01     | .3515  | 36.745 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 368.919                     | 553.33 | 552.76 | 6100.85 | 149.36 | .042 | 427.45 | 14393.11 | 3565.50 | 142.82 | .01     | .3514  | 36.738 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 383.919                     | 553.28 | 552.66 | 6100.78 | 154.84 | .044 | 428.38 | 14443.37 | 3708.61 | 143.12 | .01     | .3514  | 36.731 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 398.919                     | 553.23 | 552.57 | 6100.71 | 160.30 | .045 | 429.30 | 14493.39 | 3852.03 | 143.42 | .01     | .3514  | 36.723 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 403.048                     | 553.22 | 552.54 | 6100.70 | 161.80 | .046 | 429.56 | 14507.11 | 3891.56 | 39.53  | .00     | .3514  | 36.715 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 418.048                     | 553.17 | 552.44 | 6100.62 | 167.98 | .048 | 427.70 | 14490.35 | 4034.89 | 143.34 | .01     | .3514  | 36.713 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 427.051                     | 553.14 | 552.38 | 6100.57 | 171.68 | .049 | 426.58 | 14480.48 | 4120.61 | 85.73  | .00     | .3514  | 36.707 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 427.061                     | 553.14 | 552.45 | 6100.68 | 163.31 | .046 | 416.83 | 15221.65 | 4120.61 | .00    | .00     | .3514  | 36.732 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 442.061                     | 553.23 | 552.45 | 6100.58 | 170.98 | .048 | 74.10  | 14539.57 | 4120.96 | .00    | .00     | .3514  | 36.733 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 457.061                     | 553.26 | 552.40 | 6100.41 | 182.65 | .052 | 314.03 | 13828.46 | 4186.02 | 64.90  | .00     | .3514  | 36.705 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 463.204                     | 553.28 | 552.36 | 6100.32 | 188.94 | .054 | 412.20 | 13525.45 | 4235.78 | 49.74  | .00     | .3514  | 36.664 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 476.204                     | 553.22 | 552.24 | 6100.24 | 194.57 | .055 | 412.86 | 13564.98 | 4373.74 | 137.98 | .01     | .3514  | 36.644 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 493.204                     | 553.15 | 552.12 | 6100.15 | 200.17 | .057 | 413.43 | 13604.34 | 4511.89 | 138.16 | .01     | .3514  | 36.634 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 506.204                     | 553.08 | 551.99 | 6100.06 | 205.76 | .058 | 414.00 | 13643.53 | 4650.23 | 138.34 | .01     | .3513  | 36.624 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 523.204                     | 553.01 | 551.96 | 6099.97 | 211.33 | .060 | 414.57 | 13682.54 | 4788.73 | 138.52 | .01     | .3513  | 36.614 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 535.204                     | 552.94 | 551.73 | 6099.88 | 216.89 | .062 | 415.15 | 13721.38 | 4927.42 | 138.70 | .01     | .3513  | 36.604 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 553.204                     | 552.86 | 551.59 | 6099.78 | 222.43 | .063 | 415.72 | 13760.04 | 5066.29 | 138.88 | .01     | .3512  | 36.594 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 568.204                     | 552.79 | 551.45 | 6099.69 | 227.95 | .065 | 416.29 | 13798.53 | 5205.33 | 139.06 | .01     | .3512  | 36.583 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 583.204                     | 552.71 | 551.31 | 6099.59 | 233.45 | .066 | 416.86 | 13836.85 | 5344.56 | 139.23 | .01     | .3512  | 36.573 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 598.204                     | 552.63 | 551.16 | 6099.48 | 238.94 | .068 | 417.44 | 13874.99 | 5483.95 | 139.41 | .01     | .3511  | 36.562 | .0000  | .000   | .000 | .000   | .000 | .000   |
| 613.204                     | 552.55 | 551.01 | 6099.34 | 244.42 | .069 | 418.01 | 13912.75 | 5623.53 | 139.59 | .01     | .3511  | 36.552 | .0000  | .000   | .000 | .000   | .000 | .000   |



DATE 071076

|          |        |        |         |        |      |        |          |         |        |     |       |        |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|------|
| 628.204  | 552.46 | 550.86 | 6099.28 | 249.88 | .071 | 418.58 | 13950.74 | 5763.28 | 139.76 | .01 | .3510 | 36.541 | .000 |
| 643.204  | 552.38 | 550.70 | 6099.17 | 255.33 | .072 | 419.16 | 13988.36 | 5933.21 | 139.94 | .01 | .3510 | 36.530 | .000 |
| 658.204  | 552.29 | 550.54 | 6099.06 | 260.76 | .074 | 419.73 | 14025.80 | 6013.32 | 140.11 | .01 | .3510 | 36.520 | .000 |
| 673.204  | 552.20 | 550.38 | 6098.95 | 266.18 | .075 | 420.30 | 14063.07 | 6103.60 | 140.29 | .01 | .3509 | 36.509 | .000 |
| 688.204  | 552.11 | 550.21 | 6098.83 | 271.59 | .077 | 420.87 | 14100.16 | 6324.06 | 140.47 | .01 | .3509 | 36.498 | .000 |
| 703.204  | 552.01 | 550.14 | 6098.72 | 276.98 | .079 | 421.45 | 14137.38 | 6404.69 | 140.64 | .01 | .3508 | 36.487 | .000 |
| 718.204  | 551.92 | 549.87 | 6098.60 | 282.36 | .080 | 422.02 | 14173.82 | 6605.50 | 140.82 | .01 | .3508 | 36.476 | .000 |
| 733.204  | 551.84 | 549.77 | 6098.53 | 285.22 | .081 | 422.32 | 14193.31 | 6680.55 | 141.05 | .01 | .3508 | 36.465 | .000 |
| 748.204  | 551.74 | 549.60 | 6098.46 | 288.63 | .082 | 424.30 | 14326.94 | 6821.86 | 141.32 | .01 | .3507 | 36.459 | .000 |
| 763.204  | 551.69 | 549.54 | 6098.43 | 289.80 | .082 | 424.98 | 14372.36 | 6870.47 | 141.62 | .01 | .3507 | 36.453 | .000 |
| 778.204  | 551.68 | 549.79 | 6098.64 | 271.39 | .077 | 428.31 | 15341.21 | 6870.47 | 141.62 | .00 | .3507 | 36.503 | .000 |
| 793.204  | 551.76 | 549.70 | 6098.69 | 278.11 | .079 | 431.32 | 15021.42 | 6844.62 | 141.85 | .00 | .3507 | 36.503 | .000 |
| 808.204  | 551.82 | 549.71 | 6098.49 | 287.11 | .081 | 430.94 | 14680.42 | 6945.26 | 141.81 | .00 | .3507 | 36.478 | .000 |
| 823.204  | 551.86 | 549.57 | 6098.23 | 298.57 | .085 | 430.56 | 14310.21 | 7052.40 | 141.81 | .00 | .3507 | 36.449 | .000 |
| 838.204  | 551.67 | 549.53 | 6098.16 | 301.60 | .086 | 432.00 | 14238.53 | 7083.95 | 141.85 | .00 | .3507 | 36.412 | .000 |
| 853.204  | 551.75 | 549.35 | 6098.05 | 306.28 | .087 | 432.97 | 14305.35 | 7225.30 | 141.35 | .00 | .3507 | 36.407 | .000 |
| 868.204  | 551.64 | 549.16 | 6097.93 | 310.95 | .088 | 434.95 | 14371.61 | 7366.95 | 141.66 | .00 | .3506 | 36.397 | .000 |
| 883.204  | 551.52 | 548.96 | 6097.82 | 315.60 | .090 | 435.93 | 14437.34 | 7508.93 | 141.97 | .00 | .3506 | 36.386 | .000 |
| 898.204  | 551.43 | 548.77 | 6097.70 | 320.23 | .091 | 436.90 | 14502.30 | 7650.74 | 141.81 | .00 | .3506 | 36.376 | .000 |
| 913.204  | 551.25 | 548.57 | 6097.64 | 322.94 | .092 | 431.27 | 14655.04 | 7793.93 | 143.18 | .00 | .3506 | 36.365 | .000 |
| 928.204  | 551.09 | 548.37 | 6097.56 | 325.78 | .092 | 435.73 | 14822.14 | 7938.68 | 144.70 | .00 | .3508 | 36.371 | .000 |
| 943.204  | 550.94 | 548.17 | 6097.49 | 328.76 | .093 | 440.20 | 14943.60 | 8085.07 | 14.31  | .00 | .3512 | 36.375 | .000 |
| 958.204  | 550.79 | 547.96 | 6097.41 | 331.89 | .094 | 444.66 | 15079.43 | 8233.19 | 14.01  | .00 | .3518 | 36.380 | .000 |
| 973.204  | 550.63 | 547.76 | 6097.32 | 335.16 | .095 | 449.12 | 15209.61 | 8383.12 | 149.79 | .00 | .3526 | 36.384 | .000 |
| 988.204  | 550.57 | 547.67 | 6097.20 | 336.62 | .095 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3530 | 35.948 | .000 |
| 1003.204 | 550.50 | 547.67 | 6097.39 | 332.51 | .094 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 35.178 | .000 |
| 1018.204 | 550.46 | 547.67 | 6097.45 | 333.11 | .094 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 34.407 | .000 |
| 1033.204 | 550.42 | 547.67 | 6097.51 | 327.85 | .093 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 33.640 | .000 |
| 1048.204 | 550.38 | 547.67 | 6097.57 | 325.74 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 32.871 | .000 |
| 1063.204 | 550.35 | 547.67 | 6097.61 | 323.78 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 32.101 | .000 |
| 1078.204 | 550.32 | 547.67 | 6097.66 | 321.96 | .091 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 31.332 | .000 |
| 1093.204 | 550.31 | 547.67 | 6097.68 | 321.26 | .091 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 31.024 | .000 |
| 1108.204 | 550.32 | 547.67 | 6097.66 | 321.84 | .091 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 30.483 | .000 |
| 1123.204 | 550.33 | 547.67 | 6097.65 | 322.41 | .091 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.942 | .000 |
| 1138.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1153.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1168.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1183.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1198.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1213.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1228.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1243.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1258.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1273.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1288.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1303.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1318.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1333.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1348.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1363.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1378.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1393.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1408.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1423.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1438.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1453.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1468.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1483.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1498.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1513.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1528.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1543.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1558.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1573.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1588.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1603.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1618.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1633.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1648.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1663.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1678.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1693.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1708.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1723.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1738.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1753.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1768.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1783.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1798.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1813.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1828.204 | 550.34 | 547.67 | 6097.64 | 322.93 | .092 | 450.98 | 15263.93 | 8448.22 | 64.88  | .00 | .3529 | 29.459 | .000 |
| 1843.204 | 550.34 | 547.67 | 6097.64 | 322.93 |      |        |          |         |        |     |       |        |      |

|          | SLOT<br>INTERFACE<br>LOCATION<br>IN. | P0        | P         | T         | U         | AP        | DWDOT  | AB      | RB     | DELTA<br>TAU | *SLOT     |
|----------|--------------------------------------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------------|-----------|
|          |                                      | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | IN.          | LB/SEC.   |
|          |                                      |           |           |           |           |           |        |         |        |              |           |
| FOALWARD | 1.1676+02                            | 5.5388+02 | 5.5388+02 | 6.1016+03 | 4.5148+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000       | 1.2347+03 |
| AFT      | 1.1677+02                            | 5.5387+02 | 5.5388+02 | 6.1016+03 | 4.5148+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000       | 1.2347+03 |

GAS BUILDUP IN SLOT, DM/DT = -2.3215-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 4.2705+02 | 5.5314+02 | 5.5238+02 | 6.1006+03 | 1.5175+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1206+03 |
| AFT      | 4.2706+02 | 5.5321+02 | 5.5245+02 | 6.1007+03 | 1.5173+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1206+03 |

GAS BUILDUP IN SLOT, DW/DI = -2.3079-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 7.4634+02 | 5.5169+02 | 5.4954+02 | 6.0984+03 | 2.5423+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8705+03 |
| AFT      | 7.4635+02 | 5.5195+02 | 5.4979+02 | 6.0988+03 | 2.5413+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8705+03 |

GAS BUILDUP IN SLOT,  $DN/DT = -2.3091 \cdot D^4$

|                       |            |          |            |             |        |             |          |         |        |         |        |       |        |            |              |
|-----------------------|------------|----------|------------|-------------|--------|-------------|----------|---------|--------|---------|--------|-------|--------|------------|--------------|
| *PARTBN*              | TIME=      | 97.50    | IS=1       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 932.32 | AINCHI= | 929.78 | DELZ= | 2.540  | ALP=451.08 | ALPHI=450.39 |
| *PARTBN*              | TIME=      | 97.50    | IS=2       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 931.56 | AINCHI= | 929.78 | DELZ= | 1.783  | ALP=451.10 | ALPHI=450.63 |
| *PARTBN*              | TIME=      | 97.50    | IS=3       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 931.71 | AINCHI= | 929.78 | DELZ= | 1.930  | ALP=451.10 | ALPHI=450.58 |
| *PARTBN*              | TIME=      | 97.50    | IS=4       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 932.52 | AINCHI= | 929.78 | DELZ= | 2.740  | ALP=451.08 | ALPHI=450.32 |
| *PARTBN*              | TIME=      | 97.50    | IS=5       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.49 | AINCHI= | 929.78 | DELZ= | 3.713  | ALP=451.05 | ALPHI=450.01 |
| *PARTBN*              | TIME=      | 97.50    | IS=6       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.76 | AINCHI= | 929.78 | DELZ= | 3.979  | ALP=451.04 | ALPHI=449.93 |
| *PARTBN*              | TIME=      | 97.50    | IS=7       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.71 | AINCHI= | 929.78 | DELZ= | 3.927  | ALP=451.04 | ALPHI=449.94 |
| *PARTBN*              | TIME=      | 97.50    | IS=8       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.39 | AINCHI= | 929.78 | DELZ= | 3.607  | ALP=451.05 | ALPHI=450.04 |
| *PARTBN*              | TIME=      | 97.50    | IS=1       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 932.32 | AINCHI= | 929.78 | DELZ= | 2.540  | ALP=451.08 | ALPHI=450.39 |
| *PARTBN*              | TIME=      | 97.50    | IS=2       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 931.56 | AINCHI= | 929.78 | DELZ= | 1.783  | ALP=451.10 | ALPHI=450.63 |
| *PARTBN*              | TIME=      | 97.50    | IS=3       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 931.71 | AINCHI= | 929.78 | DELZ= | 1.930  | ALP=451.10 | ALPHI=450.58 |
| *PARTBN*              | TIME=      | 97.50    | IS=4       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 932.52 | AINCHI= | 929.78 | DELZ= | 2.740  | ALP=451.08 | ALPHI=450.32 |
| *PARTBN*              | TIME=      | 97.50    | IS=5       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.49 | AINCHI= | 929.78 | DELZ= | 3.713  | ALP=451.05 | ALPHI=450.01 |
| *PARTBN*              | TIME=      | 97.50    | IS=6       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.76 | AINCHI= | 929.78 | DELZ= | 3.979  | ALP=451.04 | ALPHI=449.93 |
| *PARTBN*              | TIME=      | 97.50    | IS=7       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.71 | AINCHI= | 929.78 | DELZ= | 3.927  | ALP=451.04 | ALPHI=449.94 |
| *PARTBN*              | TIME=      | 97.50    | IS=8       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 933.39 | AINCHI= | 929.78 | DELZ= | 3.607  | ALP=451.05 | ALPHI=450.04 |
| NEB BURNOUT INCREMENT | LOCATION = | 929.7810 | SECTOR NO. | 1           | TAU =  | 36.7168     | TAUWDP = | 36.7168 | TIME = | 97.50   |        |       |        |            |              |
| NEB BURNOUT INCREMENT | LOCATION = | 929.7810 | SECTOR NO. | 2           | TAU =  | 36.7168     | TAUWDP = | 36.7168 | TIME = | 97.50   |        |       |        |            |              |
| NEB BURNOUT INCREMENT | LOCATION = | 929.7810 | SECTOR NO. | 3           | TAU =  | 36.7168     | TAUWDP = | 36.7168 | TIME = | 97.50   |        |       |        |            |              |
| NEB BURNOUT INCREMENT | LOCATION = | 929.7810 | SECTOR NO. | 4           | TAU =  | 36.7168     | TAUWDP = | 36.7168 | TIME = | 97.50   |        |       |        |            |              |
| *PARTBN*              | TIME=      | 98.00    | IS=1       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 928.92 | AINCHI= | 914.78 | DELZ= | 14.135 | ALP=451.17 | ALPHI=447.02 |
| *PARTBN*              | TIME=      | 98.00    | IS=2       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 928.16 | AINCHI= | 914.78 | DELZ= | 13.377 | ALP=451.19 | ALPHI=447.25 |
| *PARTBN*              | TIME=      | 98.00    | IS=3       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 928.31 | AINCHI= | 914.78 | DELZ= | 13.525 | ALP=451.19 | ALPHI=447.21 |
| *PARTBN*              | TIME=      | 98.00    | IS=4       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 929.12 | AINCHI= | 914.78 | DELZ= | 14.335 | ALP=451.17 | ALPHI=446.96 |
| *PARTBN*              | TIME=      | 98.00    | IS=5       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 930.09 | AINCHI= | 929.78 | DELZ= | 3.305  | ALP=451.14 | ALPHI=451.11 |
| *PARTBN*              | TIME=      | 98.00    | IS=6       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 930.35 | AINCHI= | 929.78 | DELZ= | 3.573  | ALP=451.13 | ALPHI=451.03 |
| *PARTBN*              | TIME=      | 98.00    | IS=7       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 930.30 | AINCHI= | 929.78 | DELZ= | 3.520  | ALP=451.13 | ALPHI=451.04 |
| *PARTBN*              | TIME=      | 98.00    | IS=8       | ZCALC( 71)= | 944.78 | ZCALC( 70)= | 929.78   | AINCW=  | 929.98 | AINCHI= | 929.78 | DELZ= | 3.199  | ALP=451.14 | ALPHI=451.15 |
| *PARTBN*              | TIME=      | 98.00    | IS=1       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 928.92 | AINCHI= | 914.78 | DELZ= | 14.135 | ALP=451.17 | ALPHI=447.02 |
| *PARTBN*              | TIME=      | 98.00    | IS=2       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 928.16 | AINCHI= | 914.78 | DELZ= | 13.377 | ALP=451.19 | ALPHI=447.25 |
| *PARTBN*              | TIME=      | 98.00    | IS=3       | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78   | AINCW=  | 928.31 | AINCHI= | 914.78 | DELZ= | 13.525 | ALP=451.19 | ALPHI=447.21 |

\*PARTBN\* TIME= 98.00 IS=4 ZCALC( 70)= 929.78 ZCALC( 69)= 914.78 AINCW= 929.12 AINCHI= 914.78 DELZ=14.335 ALP=451.17 ALPHI=446.96  
\*PARTBN\* TIME= 98.00 IS=5 ZCALC( 71)= 944.78 ZCALC( 70)= 929.78 AINCW= 930.09 AINCHI= 929.78 DELZ= .305 ALP=451.14 ALPHI=451.11  
\*PARTBN\* TIME= 98.00 IS=6 ZCALC( 71)= 944.78 ZCALC( 70)= 929.78 AINCW= 930.35 AINCHI= 929.78 DELZ= .573 ALP=451.13 ALPHI=451.03  
\*PARTBN\* TIME= 98.00 IS=7 ZCALC( 71)= 944.78 ZCALC( 70)= 929.78 AINCW= 930.30 AINCHI= 929.78 DELZ= .520 ALP=451.13 ALPHI=451.04  
\*PARTBN\* TIME= 98.00 IS=8 ZCALC( 71)= 944.78 ZCALC( 70)= 929.78 AINCW= 929.98 AINCHI= 929.78 DELZ= .199 ALP=451.14 ALPHI=451.15

IGNITION TIME, TIME (S)

98.000000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 9597734.0     | 2157656.4    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 9621938.4     | 2163076.0    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 62296.530     | 14004.817    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMUT1               | .10912079+10  | .24531327+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 256.16217     | 256.16217    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVT1               | .11409879+10  | .25650428+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6267957     | 1.6267957    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 3796.8100     | 8370.5350    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 449147.13     | 990199.92    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 33.434096     | 73.709564    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 577.11745     | 1272.3262    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 242.27996     | 375534.70    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 34.513497     | 2106142.8    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 56413.443     | 124370.35    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1228.9386     | 2709.3459    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1596708     | 1.1596708    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.034317     | 28.294827    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1558.4406     | 5112.9940    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .95368515-01  | .95368515-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .37799930+09  | 548.24163    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .47709550+11  | 69183.799    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 4.2545455     | 6594.5588    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .89569937-02  | .35066906    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .94669893     | 37.271612    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | .83510726     | 38756.823    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.468725     | 3323885.5    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3386.8629     | 6099.9531    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 238.02542     | 368943.14    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 33.876424     | 2367266.2    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 254.49017     | 15529943.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .37189891+09  | 539.39378    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .45374986+11  | 65810.854    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(1+1,1)           | .89065321-02  | .35065087    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(1+2,1)           | .88987657-02  | .35034511    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(1+1,1)          | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(1+2,1)          | .52501803     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)                          | PRNT(1+2,3)          | 3387.3395     | 6097.2102    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5903924     | 2465.1131    |
| EXPANSION RATIO                                                 | EPR                  | 6.7584045     | 6.7584045    |
| PRESSURE RATIO                                                  | PEPO                 | .23320425-01  | .23320425-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ILLUSTRATIONS                                | ANLOPS               | 2.7000000     | 2.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | PSIA   | P       | PSIA   | DEG. R | T      | U        | M       | LP     | INCHES | SQ. IN. | WDOT   | DWDOT  | DM/DT  | RB     | TAU | IN/SEC | IN. | IN/SEC | TAUTO. |
|-----------------------------|--------|--------|---------|--------|--------|--------|----------|---------|--------|--------|---------|--------|--------|--------|--------|-----|--------|-----|--------|--------|
|                             | PSIA   |        |         |        |        |        | FT/SEC   |         |        |        |         | LB/SEC | LB/SEC | LB/SEC | IN/SEC |     |        |     |        |        |
| FCRE                        | 548.24 | 548.24 | 6099.95 | 6.73   | .002   | 414.57 | 13672.17 | 151.07  | 146.64 | -4.42  | .3505   | 37.272 | .000   | .000   |        |     |        |     |        |        |
| 15.000                      | 548.24 | 548.24 | 6099.95 | 12.85  | .004   | 414.83 | 13690.17 | 289.39  | 138.33 | .01    | .3505   | 37.229 | .000   | .000   |        |     |        |     |        |        |
| 35.000                      | 548.24 | 548.24 | 6099.94 | 18.97  | .005   | 415.09 | 13708.14 | 427.79  | 138.41 | .01    | .3505   | 37.224 | .000   | .000   |        |     |        |     |        |        |
| 45.000                      | 548.23 | 548.22 | 6099.93 | 25.08  | .007   | 415.36 | 13726.08 | 566.28  | 138.50 | .01    | .3505   | 37.220 | .000   | .000   |        |     |        |     |        |        |
| 60.000                      | 548.22 | 548.20 | 6099.92 | 31.18  | .009   | 415.62 | 13743.98 | 704.86  | 138.58 | .01    | .3504   | 37.215 | .000   | .000   |        |     |        |     |        |        |
| 75.000                      | 548.22 | 548.18 | 6099.90 | 37.26  | .011   | 415.88 | 13761.85 | 843.52  | 138.67 | .01    | .3504   | 37.210 | .000   | .000   |        |     |        |     |        |        |
| 90.000                      | 548.20 | 548.16 | 6099.88 | 43.34  | .012   | 416.14 | 13779.69 | 982.27  | 138.75 | .00    | .3504   | 37.205 | .000   | .000   |        |     |        |     |        |        |
| 105.000                     | 548.19 | 548.13 | 6099.86 | 49.40  | .014   | 416.40 | 13797.49 | 1121.10 | 138.84 | .00    | .3504   | 37.200 | .000   | .000   |        |     |        |     |        |        |
| 116.761                     | 548.18 | 548.11 | 6099.84 | 54.15  | .015   | 416.60 | 13811.42 | 1230.01 | 108.91 | .00    | .3504   | 37.195 | .000   | .000   |        |     |        |     |        |        |
| 116.771                     | 548.18 | 548.10 | 6099.83 | 55.67  | .016   | 416.81 | 13833.20 | 1230.01 | .00    | .00    | .3504   | 37.195 | .000   | .000   |        |     |        |     |        |        |
| 131.771                     | 548.16 | 548.07 | 6099.81 | 59.89  | .017   | 416.44 | 13810.94 | 1340.49 | 110.43 | .05    | .3504   | 37.196 | .000   | .000   |        |     |        |     |        |        |
| 143.919                     | 548.15 | 548.04 | 6099.79 | 63.91  | .018   | 415.78 | 13755.11 | 1445.74 | 105.23 | .01    | .3504   | 37.188 | .000   | .000   |        |     |        |     |        |        |
| 159.919                     | 548.13 | 548.00 | 6099.76 | 69.78  | .020   | 416.71 | 13809.44 | 1584.55 | 138.82 | .00    | .3504   | 37.182 | .000   | .000   |        |     |        |     |        |        |
| 173.919                     | 548.11 | 547.96 | 6099.73 | 75.61  | .021   | 417.63 | 13863.52 | 1723.67 | 139.12 | .00    | .3504   | 37.176 | .000   | .000   |        |     |        |     |        |        |
| 188.919                     | 548.08 | 547.91 | 6099.70 | 81.42  | .023   | 418.56 | 13917.35 | 1863.09 | 139.42 | .00    | .3504   | 37.170 | .000   | .000   |        |     |        |     |        |        |
| 203.919                     | 548.06 | 547.86 | 6099.66 | 87.20  | .025   | 419.48 | 13970.92 | 2002.81 | 139.73 | .00    | .3504   | 37.164 | .000   | .000   |        |     |        |     |        |        |
| 218.919                     | 548.03 | 547.81 | 6099.62 | 92.95  | .026   | 420.41 | 14024.24 | 2142.64 | 140.03 | .00    | .3503   | 37.158 | .000   | .000   |        |     |        |     |        |        |
| 233.919                     | 548.00 | 547.75 | 6099.57 | 98.67  | .028   | 421.33 | 14077.31 | 2283.16 | 140.33 | .00    | .3503   | 37.151 | .000   | .000   |        |     |        |     |        |        |
| 248.919                     | 547.97 | 547.69 | 6099.53 | 104.37 | .030   | 422.26 | 14130.13 | 2423.79 | 140.63 | .00    | .3503   | 37.145 | .000   | .000   |        |     |        |     |        |        |
| 263.919                     | 547.93 | 547.62 | 6099.48 | 110.04 | .031   | 423.18 | 14182.70 | 2564.72 | 140.93 | .00    | .3503   | 37.138 | .000   | .000   |        |     |        |     |        |        |
| 278.919                     | 547.90 | 547.56 | 6099.43 | 115.69 | .033   | 424.01 | 14235.02 | 2705.96 | 141.24 | .00    | .3503   | 37.132 | .000   | .000   |        |     |        |     |        |        |
| 293.919                     | 547.86 | 547.48 | 6099.38 | 121.31 | .034   | 425.03 | 14287.08 | 2847.49 | 141.54 | .00    | .3503   | 37.125 | .000   | .000   |        |     |        |     |        |        |
| 308.919                     | 547.82 | 547.41 | 6099.32 | 126.91 | .036   | 425.96 | 14338.90 | 2989.33 | 141.84 | .00    | .3502   | 37.118 | .000   | .000   |        |     |        |     |        |        |
| 323.919                     | 547.78 | 547.33 | 6099.27 | 132.48 | .038   | 426.88 | 14390.46 | 3131.47 | 142.14 | .00    | .3502   | 37.111 | .000   | .000   |        |     |        |     |        |        |
| 338.919                     | 547.74 | 547.25 | 6099.21 | 138.04 | .039   | 427.81 | 14441.77 | 3273.91 | 142.44 | .00    | .3502   | 37.104 | .000   | .000   |        |     |        |     |        |        |
| 353.919                     | 547.69 | 547.16 | 6099.15 | 143.57 | .041   | 428.73 | 14492.83 | 3416.65 | 142.74 | .00    | .3502   | 37.096 | .000   | .000   |        |     |        |     |        |        |
| 368.919                     | 547.64 | 547.08 | 6099.08 | 149.08 | .042   | 429.66 | 14543.63 | 3559.69 | 143.04 | .00    | .3502   | 37.089 | .000   | .000   |        |     |        |     |        |        |
| 383.919                     | 547.59 | 546.98 | 6099.02 | 154.57 | .044   | 430.58 | 14594.19 | 3703.03 | 143.34 | .00    | .3501   | 37.082 | .000   | .000   |        |     |        |     |        |        |
| 398.919                     | 547.54 | 546.89 | 6098.95 | 160.04 | .045   | 431.51 | 14644.49 | 3846.68 | 143.64 | .00    | .3501   | 37.074 | .000   | .000   |        |     |        |     |        |        |
| 413.948                     | 547.53 | 546.86 | 6098.93 | 161.54 | .046   | 431.76 | 14658.29 | 3886.27 | 143.94 | .00    | .3501   | 37.066 | .000   | .000   |        |     |        |     |        |        |
| 428.948                     | 547.48 | 546.76 | 6098.85 | 167.74 | .048   | 429.93 | 14640.88 | 4029.83 | 143.56 | .00    | .3501   | 37.064 | .000   | .000   |        |     |        |     |        |        |
| 443.951                     | 547.45 | 546.70 | 6098.80 | 171.45 | .049   | 428.78 | 14630.61 | 4115.70 | 85.87  | .00    | .3501   | 37.058 | .000   | .000   |        |     |        |     |        |        |
| 458.951                     | 547.45 | 546.75 | 6098.80 | 165.45 | .047   | 428.29 | 14560.37 | 4115.70 | .00    | .00    | .3501   | 37.083 | .000   | .000   |        |     |        |     |        |        |
| 473.951                     | 547.45 | 546.75 | 6098.79 | 172.27 | .049   | 428.29 | 14560.37 | 4115.70 | .00    | .00    | .3501   | 37.084 | .000   | .000   |        |     |        |     |        |        |
| 488.951                     | 547.45 | 546.75 | 6098.65 | 162.78 | .052   | 412.89 | 13934.92 | 4179.16 | 62.92  | .00    | .3501   | 37.056 | .000   | .000   |        |     |        |     |        |        |
| 503.951                     | 547.45 | 546.67 | 6098.56 | 180.54 | .053   | 415.07 | 13670.58 | 4220.01 | 49.63  | .00    | .3501   | 37.015 | .000   | .000   |        |     |        |     |        |        |
| 518.951                     | 547.45 | 546.55 | 6098.48 | 194.18 | .055   | 415.07 | 13670.58 | 4367.02 | 138.21 | .00    | .3501   | 36.995 | .000   | .000   |        |     |        |     |        |        |
| 533.951                     | 547.44 | 546.43 | 6098.39 | 199.79 | .057   | 415.64 | 13749.89 | 4505.41 | 138.39 | .00    | .3501   | 36.985 | .000   | .000   |        |     |        |     |        |        |
| 548.951                     | 547.38 | 546.30 | 6098.30 | 225.40 | .058   | 416.21 | 13789.28 | 4643.98 | 138.57 | .00    | .3500   | 36.975 | .000   | .000   |        |     |        |     |        |        |
| 563.951                     | 547.31 | 546.17 | 6098.21 | 210.98 | .060   | 416.78 | 13828.50 | 4782.72 | 138.75 | .00    | .3500   | 36.965 | .000   | .000   |        |     |        |     |        |        |
| 578.951                     | 547.23 | 546.00 | 6098.12 | 216.55 | .061   | 417.36 | 13867.53 | 4921.65 | 138.93 | .00    | .3500   | 36.955 | .000   | .000   |        |     |        |     |        |        |
| 593.951                     | 547.16 | 545.90 | 6098.03 | 222.09 | .063   | 417.93 | 13906.39 | 5060.75 | 139.10 | .00    | .3499   | 36.944 | .000   | .000   |        |     |        |     |        |        |
| 608.951                     | 547.08 | 545.76 | 6097.93 | 227.63 | .065   | 418.50 | 13945.07 | 5200.03 | 139.26 | .00    | .3499   | 36.934 | .000   | .000   |        |     |        |     |        |        |
| 623.951                     | 547.01 | 545.62 | 6097.83 | 233.15 | .066   | 419.07 | 13983.58 | 5339.48 | 139.46 | .00    | .3499   | 36.924 | .000   | .000   |        |     |        |     |        |        |
| 638.951                     | 546.93 | 545.48 | 6097.72 | 238.65 | .068   | 419.64 | 14021.90 | 5479.11 | 139.63 | .00    | .3498   | 36.913 | .000   | .000   |        |     |        |     |        |        |
| 653.951                     | 546.85 | 545.33 | 6097.62 | 244.14 | .069   | 420.22 | 14060.25 | 5618.92 | 139.81 | .00    | .3498   | 36.903 | .000   | .000   |        |     |        |     |        |        |

|          |        |        |         |        |      |        |          |          |        |     |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|-----|-------|--------|-------|------|
| 625.204  | 546.76 | 545.10 | 6097.51 | 249.61 | .071 | 420.79 | 14098.02 | 5758.91  | 139.99 | .00 | .3498 | 36.892 | .0003 | .000 |
| 643.204  | 546.60 | 545.02 | 6097.41 | 255.07 | .072 | 421.36 | 14135.82 | 5899.07  | 140.16 | .00 | .3497 | 36.881 | .0003 | .000 |
| 650.204  | 546.59 | 544.86 | 6097.30 | 260.52 | .074 | 421.93 | 14173.43 | 6039.41  | 140.34 | .00 | .3497 | 36.870 | .0000 | .000 |
| 673.204  | 546.50 | 544.70 | 6097.18 | 265.95 | .075 | 422.50 | 14210.87 | 6179.92  | 140.51 | .00 | .3496 | 36.859 | .0000 | .000 |
| 688.204  | 546.41 | 544.54 | 6097.07 | 271.37 | .077 | 423.08 | 14248.13 | 6320.61  | 140.69 | .00 | .3496 | 36.848 | .0003 | .000 |
| 703.204  | 546.32 | 544.37 | 6096.95 | 276.78 | .079 | 423.65 | 14285.22 | 6461.48  | 140.86 | .00 | .3496 | 36.838 | .0000 | .000 |
| 718.204  | 546.22 | 544.20 | 6096.84 | 282.17 | .080 | 424.22 | 14322.12 | 6602.52  | 141.04 | .00 | .3495 | 36.827 | .0000 | .000 |
| 726.191  | 546.17 | 544.10 | 6096.77 | 285.34 | .081 | 424.80 | 14359.10 | 6743.68  | 141.22 | .00 | .3495 | 36.815 | .0000 | .000 |
| 741.191  | 546.04 | 543.93 | 6096.70 | 288.47 | .082 | 425.38 | 14396.01 | 6884.84  | 141.40 | .00 | .3495 | 36.804 | .0000 | .000 |
| 746.336  | 546.00 | 543.87 | 6096.67 | 289.65 | .082 | 425.96 | 14433.00 | 7026.00  | 141.58 | .00 | .3495 | 36.793 | .0000 | .000 |
| 746.346  | 545.99 | 543.80 | 6097.01 | 274.34 | .078 | 426.54 | 14470.00 | 7167.16  | 141.76 | .00 | .3495 | 36.782 | .0000 | .000 |
| 761.346  | 546.07 | 544.07 | 6096.89 | 279.92 | .079 | 427.12 | 14507.00 | 7308.32  | 141.94 | .00 | .3495 | 36.771 | .0000 | .000 |
| 776.346  | 546.11 | 544.01 | 6096.71 | 287.82 | .082 | 427.70 | 14544.00 | 7449.48  | 142.12 | .00 | .3495 | 36.760 | .0000 | .000 |
| 791.346  | 546.14 | 543.88 | 6096.47 | 298.15 | .085 | 428.28 | 14581.00 | 7590.64  | 142.30 | .00 | .3495 | 36.749 | .0000 | .000 |
| 794.831  | 546.14 | 543.84 | 6096.41 | 303.92 | .085 | 428.86 | 14618.00 | 7731.80  | 142.48 | .00 | .3495 | 36.738 | .0000 | .000 |
| 809.831  | 546.03 | 543.65 | 6096.30 | 305.62 | .087 | 429.44 | 14655.00 | 7872.96  | 142.66 | .00 | .3495 | 36.727 | .0000 | .000 |
| 824.831  | 545.91 | 543.46 | 6096.18 | 313.31 | .088 | 430.02 | 14692.00 | 8014.12  | 142.84 | .00 | .3495 | 36.716 | .0000 | .000 |
| 839.831  | 545.79 | 543.27 | 6096.07 | 319.63 | .089 | 430.60 | 14729.00 | 8155.28  | 143.02 | .00 | .3495 | 36.705 | .0000 | .000 |
| 854.781  | 545.68 | 543.08 | 6095.95 | 319.63 | .091 | 431.18 | 14766.00 | 8296.44  | 143.20 | .00 | .3495 | 36.694 | .0000 | .000 |
| 869.781  | 545.53 | 542.89 | 6095.88 | 322.71 | .092 | 431.76 | 14803.00 | 8437.60  | 143.38 | .00 | .3495 | 36.683 | .0000 | .000 |
| 884.781  | 545.38 | 542.69 | 6095.79 | 325.91 | .092 | 432.34 | 14840.00 | 8578.76  | 143.56 | .00 | .3495 | 36.672 | .0000 | .000 |
| 899.781  | 545.24 | 542.49 | 6095.71 | 329.24 | .093 | 432.92 | 14877.00 | 8719.92  | 143.74 | .00 | .3495 | 36.661 | .0000 | .000 |
| 914.781  | 545.09 | 542.28 | 6095.62 | 332.71 | .094 | 433.50 | 14914.00 | 8861.08  | 143.92 | .00 | .3495 | 36.650 | .0000 | .000 |
| 929.781  | 544.95 | 542.08 | 6095.53 | 336.17 | .095 | 434.08 | 14951.00 | 8999.92  | 144.10 | .00 | .3495 | 36.639 | .0000 | .000 |
| 944.781  | 544.93 | 542.08 | 6095.56 | 334.92 | .095 | 434.66 | 14988.00 | 9138.76  | 144.28 | .00 | .3495 | 36.628 | .0000 | .000 |
| 959.781  | 544.87 | 542.08 | 6095.65 | 331.43 | .094 | 435.24 | 15025.00 | 9277.60  | 144.46 | .00 | .3495 | 36.617 | .0000 | .000 |
| 974.781  | 544.83 | 542.08 | 6095.71 | 329.28 | .093 | 435.82 | 15062.00 | 9416.44  | 144.64 | .00 | .3495 | 36.606 | .0000 | .000 |
| 989.781  | 544.80 | 542.08 | 6095.76 | 327.27 | .093 | 436.40 | 15099.00 | 9555.28  | 144.82 | .00 | .3495 | 36.595 | .0000 | .000 |
| 1004.781 | 544.76 | 542.08 | 6095.81 | 325.39 | .092 | 436.98 | 15136.00 | 9694.12  | 145.00 | .00 | .3495 | 36.584 | .0000 | .000 |
| 1019.781 | 544.74 | 542.08 | 6095.85 | 323.63 | .092 | 437.56 | 15173.00 | 9832.96  | 145.18 | .00 | .3495 | 36.573 | .0000 | .000 |
| 1034.781 | 544.71 | 542.08 | 6095.89 | 322.01 | .091 | 438.14 | 15210.00 | 9971.80  | 145.36 | .00 | .3495 | 36.562 | .0000 | .000 |
| 1049.791 | 544.70 | 542.08 | 6095.91 | 321.39 | .091 | 438.72 | 15247.00 | 10110.64 | 145.54 | .00 | .3495 | 36.551 | .0000 | .000 |
| 1059.791 | 544.71 | 542.08 | 6095.90 | 321.96 | .091 | 439.30 | 15284.00 | 10249.48 | 145.72 | .00 | .3495 | 36.540 | .0000 | .000 |
| 1070.791 | 544.72 | 542.08 | 6095.88 | 322.54 | .091 | 439.88 | 15321.00 | 10388.32 | 145.90 | .00 | .3495 | 36.529 | .0000 | .000 |
| 1084.171 | 544.73 | 542.08 | 6095.87 | 323.06 | .092 | 440.46 | 15358.00 | 10527.16 | 146.08 | .00 | .3495 | 36.518 | .0000 | .000 |
| AF1(A)   | 539.39 | 515.00 | 6059.31 | 994.53 | .283 | 441.04 | 15395.00 | 10666.00 | 146.26 | .00 | .3495 | 36.507 | .0000 | .000 |
| AF1(B)   | 539.39 | 539.39 | 6097.21 | -0.02  | .000 | 441.62 | 15432.00 | 10804.84 | 146.44 | .00 | .3495 | 36.496 | .0000 | .000 |

| SLOT                                    | INTERFACE | PO        | P         | T         | U         | AP        | DWDOT  | AS      | RB     | DELTA  | WSLOT     |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|---------|--------|--------|-----------|
|                                         | LOCATION  | PSIA      | PSIA      | DEG. R    | FT/SEC    | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC | TAU    | LB/SEC    |
|                                         | IN.       |           |           |           |           |           |        |         |        | IN.    |           |
| FOREWARD                                | 1.1676+02 | 5.4818+02 | 5.4811+02 | 6.0998+03 | 4.5435+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.2300+03 |
| AFT                                     | 1.1677+02 | 5.4818+02 | 5.4810+02 | 6.0998+03 | 4.5436+01 | 1.6460+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 1.2300+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.3507-04 |           |           |           |           |           |           |        |         |        |        |           |
| FOREWARD                                | 4.2705+02 | 5.4745+02 | 5.4670+02 | 6.0988+03 | 1.5311+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 4.1157+03 |
| AFT                                     | 4.2706+02 | 5.4750+02 | 5.4675+02 | 6.0989+03 | 1.5310+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 4.1157+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.3374-04 |           |           |           |           |           |           |        |         |        |        |           |
| FOREWARD                                | 7.4634+02 | 5.4600+02 | 5.4387+02 | 6.0967+03 | 2.5674+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.8679+03 |
| AFT                                     | 7.4635+02 | 5.4621+02 | 5.4408+02 | 6.0970+03 | 2.5666+02 | 1.6383+04 | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 6.8679+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.3394-04 |           |           |           |           |           |           |        |         |        |        |           |

|                                  |                   |                     |                |                 |               |              |                |        |       |
|----------------------------------|-------------------|---------------------|----------------|-----------------|---------------|--------------|----------------|--------|-------|
| WEB BURNOUT INCREMENT LOCATION = | 929.7810          | SECTOR NO. =        | 5              | TAU =           | 36.7168       | TAUWDP =     | 36.7168        | TIME = | 98.00 |
| WEB BURNOUT INCREMENT LOCATION = | 929.7810          | SECTOR NO. =        | 6              | TAU =           | 36.7168       | TAUWDP =     | 36.7168        | TIME = | 98.00 |
| WEB BURNOUT INCREMENT LOCATION = | 929.7810          | SECTOR NO. =        | 7              | TAU =           | 36.7168       | TAUWDP =     | 36.7168        | TIME = | 98.00 |
| WEB BURNOUT INCREMENT LOCATION = | 929.7810          | SECTOR NO. =        | 8              | TAU =           | 36.7168       | TAUWDP =     | 36.7168        | TIME = | 98.00 |
| *PARTBN* TIME = 98.50            | IS=1 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 925.52 AINCHI = | 914.78 DELZ = | 10.735 ALP = | 451.26 ALPHI = | 448.12 |       |
| *PARTBN* TIME = 98.50            | IS=2 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 924.76 AINCHI = | 914.78 DELZ = | 9.975 ALP =  | 451.28 ALPHI = | 448.36 |       |
| *PARTBN* TIME = 98.50            | IS=3 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 924.90 AINCHI = | 914.78 DELZ = | 10.124 ALP = | 451.28 ALPHI = | 448.32 |       |
| *PARTBN* TIME = 98.50            | IS=4 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 925.72 AINCHI = | 914.78 DELZ = | 10.937 ALP = | 451.26 ALPHI = | 448.06 |       |
| *PARTBN* TIME = 98.50            | IS=5 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.69 AINCHI = | 914.78 DELZ = | 11.909 ALP = | 451.23 ALPHI = | 447.76 |       |
| *PARTBN* TIME = 98.50            | IS=6 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.96 AINCHI = | 914.78 DELZ = | 12.178 ALP = | 451.22 ALPHI = | 447.67 |       |
| *PARTBN* TIME = 98.50            | IS=7 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.91 AINCHI = | 914.78 DELZ = | 12.126 ALP = | 451.22 ALPHI = | 447.69 |       |
| *PARTBN* TIME = 98.50            | IS=8 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.58 AINCHI = | 914.78 DELZ = | 11.803 ALP = | 451.23 ALPHI = | 447.79 |       |
| *PARTBN* TIME = 98.50            | IS=1 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 925.52 AINCHI = | 914.78 DELZ = | 10.735 ALP = | 451.26 ALPHI = | 448.12 |       |
| *PARTBN* TIME = 98.50            | IS=2 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 924.76 AINCHI = | 914.78 DELZ = | 9.975 ALP =  | 451.28 ALPHI = | 448.36 |       |
| *PARTBN* TIME = 98.50            | IS=3 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 924.90 AINCHI = | 914.78 DELZ = | 10.124 ALP = | 451.28 ALPHI = | 448.32 |       |
| *PARTBN* TIME = 98.50            | IS=4 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 925.72 AINCHI = | 914.78 DELZ = | 10.937 ALP = | 451.26 ALPHI = | 448.06 |       |
| *PARTBN* TIME = 98.50            | IS=5 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.69 AINCHI = | 914.78 DELZ = | 11.909 ALP = | 451.23 ALPHI = | 447.76 |       |
| *PARTBN* TIME = 98.50            | IS=6 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.96 AINCHI = | 914.78 DELZ = | 12.178 ALP = | 451.22 ALPHI = | 447.67 |       |
| *PARTBN* TIME = 98.50            | IS=7 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.91 AINCHI = | 914.78 DELZ = | 12.126 ALP = | 451.22 ALPHI = | 447.69 |       |
| *PARTBN* TIME = 98.50            | IS=8 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 926.58 AINCHI = | 914.78 DELZ = | 11.803 ALP = | 451.23 ALPHI = | 447.79 |       |
| *PARTBN* TIME = 99.00            | IS=1 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 922.12 AINCHI = | 914.78 DELZ = | 7.340 ALP =  | 451.35 ALPHI = | 449.23 |       |
| *PARTBN* TIME = 99.00            | IS=2 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 921.36 AINCHI = | 914.78 DELZ = | 6.576 ALP =  | 451.37 ALPHI = | 449.47 |       |
| *PARTBN* TIME = 99.00            | IS=3 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 921.51 AINCHI = | 914.78 DELZ = | 6.726 ALP =  | 451.37 ALPHI = | 449.42 |       |
| *PARTBN* TIME = 99.00            | IS=4 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 922.32 AINCHI = | 914.78 DELZ = | 7.542 ALP =  | 451.35 ALPHI = | 449.16 |       |
| *PARTBN* TIME = 99.00            | IS=5 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 923.30 AINCHI = | 914.78 DELZ = | 8.520 ALP =  | 451.32 ALPHI = | 448.66 |       |
| *PARTBN* TIME = 99.00            | IS=6 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 923.57 AINCHI = | 914.78 DELZ = | 8.790 ALP =  | 451.31 ALPHI = | 448.77 |       |
| *PARTBN* TIME = 99.00            | IS=7 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 923.52 AINCHI = | 914.78 DELZ = | 8.736 ALP =  | 451.31 ALPHI = | 448.78 |       |
| *PARTBN* TIME = 99.00            | IS=8 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 923.19 AINCHI = | 914.78 DELZ = | 8.413 ALP =  | 451.32 ALPHI = | 448.89 |       |
| *PARTBN* TIME = 99.00            | IS=1 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 922.12 AINCHI = | 914.78 DELZ = | 7.340 ALP =  | 451.35 ALPHI = | 449.23 |       |
| *PARTBN* TIME = 99.00            | IS=2 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 921.36 AINCHI = | 914.78 DELZ = | 6.576 ALP =  | 451.37 ALPHI = | 449.47 |       |
| *PARTBN* TIME = 99.00            | IS=3 ZCALC( 70) = | 929.78 ZCALC( 69) = | 914.78 AINCW = | 921.51 AINCHI = | 914.78 DELZ = | 6.726 ALP =  | 451.37 ALPHI = | 449.42 |       |



|          |       |       |      |             |        |             |        |        |        |         |        |       |       |      |        |        |        |
|----------|-------|-------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|-------|------|--------|--------|--------|
| *PARTBN* | TIME= | 99.00 | IS=4 | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78 | AINCW= | 922.32 | AINCHI= | 914.78 | DELZ= | 7.542 | ALP= | 451.35 | ALPHI= | 449.16 |
| *PARTBN* | TIME= | 99.00 | IS=5 | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78 | AINCW= | 923.30 | AINCHI= | 914.78 | DELZ= | 8.520 | ALP= | 451.32 | ALPHI= | 448.86 |
| *PARTBN* | TIME= | 99.00 | IS=6 | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78 | AINCW= | 923.57 | AINCHI= | 914.78 | DELZ= | 8.790 | ALP= | 451.31 | ALPHI= | 448.77 |
| *PARTBN* | TIME= | 99.00 | IS=7 | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78 | AINCW= | 923.52 | AINCHI= | 914.78 | DELZ= | 8.738 | ALP= | 451.31 | ALPHI= | 448.78 |
| *PARTBN* | TIME= | 99.00 | IS=8 | ZCALC( 70)= | 929.78 | ZCALC( 69)= | 914.78 | AINCW= | 923.19 | AINCHI= | 914.78 | DELZ= | 8.413 | ALP= | 451.32 | ALPHI= | 448.69 |



IGNITION TIME, TIME (S)

99.000000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9506141.6     | 2137065.7    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 9528540.7     | 2142101.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 62911.573     | 14143.084    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .11007597*10  | .24746062*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.11724     | 256.11724    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .11505633*10  | .25865685*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6269359     | 1.6269359    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3759.9783     | 8289.3149    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 452925.48     | 998529.76    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 33.764185     | 74.437286    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 543.43540     | 1198.0700    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 240.65747     | 373019.82    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 32.345062     | 1973813.1    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 52639.566     | 116050.30    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1225.2628     | 2701.2421    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1596654     | 1.1596654    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.832967     | 28.291850    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1558.3401     | 5112.6643    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .95210039-01  | .95210039-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .37409009*09  | 542.57181    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .48076589*11  | 69729.197    |
| BURN AREA (M**2,IN**2)                     | ANH                  | 4.0787517     | 6322.0779    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .08743429*02  | .34938358    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .95559772     | 37.621958    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .59808602     | 36497.083    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.505752     | 3326145.1    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3307.8865     | 6298.1956    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 236.57872     | 366697.75    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLDT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 313744956     | 1937196.0    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 256.80749     | 15671355.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .36807954*09  | 533.85424    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .45744970*11  | 66347.471    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI*1,1)          | .08744196*02  | .34938660    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI*2,1)          | .08666736*02  | .34908164    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI*1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI*2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722*02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1340300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI*2,3)         | 3386.3850     | 6095.4930    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 13.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5911615     | 2466.3354    |
| EXPANSION RATIO                            | EPR                  | 6.7551374     | 6.7551374    |
| PRESSURE RATIO                             | PEPO                 | .23335556-01  | .23335556-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| HASS<br>ADDITION<br>REGIONS | PO     | PSIA   | PSIA   | DEG. R  | T | U      | M    | LP     | INCHES   | SG. IN. | AP | WDOT    | LB/SEC | DWDOT | LB/SEC | OW/DT | RB | TAU  | IN/SEC | IN. | IN/SEC | IN.    | TAUTO. |
|-----------------------------|--------|--------|--------|---------|---|--------|------|--------|----------|---------|----|---------|--------|-------|--------|-------|----|------|--------|-----|--------|--------|--------|
| FORE                        | 542.57 | 542.57 | 542.57 | 6098.20 |   | 6.43   | .002 | 416.78 | 13817.71 | 144.45  |    | 144.45  | 140.07 |       | 140.07 | -4.39 |    | 3492 | 37.622 |     | 3492   | 37.622 | .0000  |
| 15.000                      | 542.57 | 542.57 | 542.57 | 6098.19 |   | 12.56  | .004 | 417.04 | 13835.81 | 283.00  |    | 283.00  | 138.55 |       | 138.55 | .00   |    | 3492 | 37.579 |     | 3492   | 37.579 | .0000  |
| 30.000                      | 542.57 | 542.56 | 542.56 | 6098.18 |   | 18.69  | .005 | 417.30 | 13853.87 | 421.63  |    | 421.63  | 138.63 |       | 138.63 | .00   |    | 3492 | 37.575 |     | 3492   | 37.575 | .0000  |
| 45.000                      | 542.56 | 542.55 | 542.55 | 6098.17 |   | 24.81  | .007 | 417.56 | 13871.89 | 560.34  |    | 560.34  | 138.72 |       | 138.72 | .00   |    | 3492 | 37.570 |     | 3492   | 37.570 | .0000  |
| 60.000                      | 542.56 | 542.55 | 542.55 | 6098.16 |   | 30.91  | .009 | 417.82 | 13889.89 | 699.14  |    | 699.14  | 138.80 |       | 138.80 | .00   |    | 3492 | 37.565 |     | 3492   | 37.565 | .0000  |
| 75.000                      | 542.55 | 542.51 | 542.51 | 6098.14 |   | 37.01  | .010 | 418.08 | 13927.84 | 838.03  |    | 838.03  | 138.89 |       | 138.89 | .00   |    | 3492 | 37.560 |     | 3492   | 37.560 | .0000  |
| 90.000                      | 542.54 | 542.49 | 542.49 | 6098.12 |   | 43.09  | .012 | 418.34 | 13925.77 | 977.00  |    | 977.00  | 138.97 |       | 138.97 | .00   |    | 3491 | 37.555 |     | 3491   | 37.555 | .0000  |
| 105.000                     | 542.52 | 542.46 | 542.46 | 6098.10 |   | 49.16  | .014 | 418.60 | 13943.66 | 1116.05 |    | 1116.05 | 139.06 |       | 139.06 | .00   |    | 3491 | 37.550 |     | 3491   | 37.550 | .0000  |
| 116.761                     | 542.51 | 542.44 | 542.44 | 6098.08 |   | 53.92  | .015 | 418.80 | 13957.66 | 1225.13 |    | 1225.13 | 109.09 |       | 109.09 | .00   |    | 3491 | 37.545 |     | 3491   | 37.545 | .0000  |
| 116.771                     | 542.51 | 542.43 | 542.43 | 6098.08 |   | 55.60  | .016 | 283.97 | 13535.21 | 1225.13 |    | 1225.13 | .00    |       | .00    | .00   |    | 3491 | 37.545 |     | 3491   | 37.545 | .0000  |
| 131.771                     | 542.52 | 542.41 | 542.41 | 6098.06 |   | 59.56  | .017 | 358.02 | 13737.21 | 1331.85 |    | 1331.85 | 106.65 |       | 106.65 | .00   |    | 3491 | 37.546 |     | 3491   | 37.546 | .0000  |
| 143.919                     | 542.48 | 542.38 | 542.38 | 6098.04 |   | 63.47  | .018 | 417.99 | 13901.06 | 1436.28 |    | 1436.28 | 104.41 |       | 104.41 | .00   |    | 3491 | 37.538 |     | 3491   | 37.538 | .0000  |
| 156.919                     | 542.46 | 542.34 | 542.34 | 6098.01 |   | 69.35  | .020 | 418.91 | 13955.73 | 1575.32 |    | 1575.32 | 139.04 |       | 139.04 | .00   |    | 3491 | 37.532 |     | 3491   | 37.532 | .0000  |
| 173.919                     | 542.44 | 542.30 | 542.30 | 6097.98 |   | 75.20  | .021 | 419.84 | 14010.15 | 1714.65 |    | 1714.65 | 139.34 |       | 139.34 | .00   |    | 3491 | 37.526 |     | 3491   | 37.526 | .0000  |
| 188.919                     | 542.51 | 542.25 | 542.25 | 6097.94 |   | 81.01  | .023 | 423.76 | 14064.32 | 1854.30 |    | 1854.30 | 139.64 |       | 139.64 | .00   |    | 3491 | 37.520 |     | 3491   | 37.520 | .0000  |
| 203.919                     | 542.39 | 542.20 | 542.20 | 6097.90 |   | 86.80  | .025 | 421.69 | 14118.23 | 1994.24 |    | 1994.24 | 139.95 |       | 139.95 | .00   |    | 3491 | 37.514 |     | 3491   | 37.514 | .0000  |
| 218.919                     | 542.36 | 542.15 | 542.15 | 6097.86 |   | 92.56  | .026 | 422.61 | 14171.88 | 2134.49 |    | 2134.49 | 140.25 |       | 140.25 | .00   |    | 3491 | 37.508 |     | 3491   | 37.508 | .0000  |
| 233.919                     | 542.33 | 542.09 | 542.09 | 6097.82 |   | 98.30  | .028 | 423.54 | 14225.28 | 2275.03 |    | 2275.03 | 140.55 |       | 140.55 | .00   |    | 3490 | 37.501 |     | 3490   | 37.501 | .0000  |
| 248.919                     | 542.30 | 542.03 | 542.03 | 6097.77 |   | 104.01 | .029 | 424.46 | 14278.42 | 2415.88 |    | 2415.88 | 140.85 |       | 140.85 | .00   |    | 3490 | 37.495 |     | 3490   | 37.495 | .0000  |
| 263.919                     | 542.27 | 541.96 | 541.96 | 6097.73 |   | 109.69 | .031 | 425.39 | 14331.31 | 2557.03 |    | 2557.03 | 141.15 |       | 141.15 | .00   |    | 3490 | 37.488 |     | 3490   | 37.488 | .0000  |
| 278.919                     | 542.23 | 541.90 | 541.90 | 6097.68 |   | 115.35 | .033 | 426.31 | 14383.95 | 2698.49 |    | 2698.49 | 141.45 |       | 141.45 | .00   |    | 3490 | 37.481 |     | 3490   | 37.481 | .0000  |
| 293.919                     | 542.20 | 541.83 | 541.83 | 6097.62 |   | 120.98 | .034 | 427.24 | 14436.32 | 2840.24 |    | 2840.24 | 141.75 |       | 141.75 | .00   |    | 3490 | 37.475 |     | 3490   | 37.475 | .0000  |
| 308.919                     | 542.16 | 541.75 | 541.75 | 6097.57 |   | 126.59 | .036 | 428.16 | 14488.45 | 2982.29 |    | 2982.29 | 142.05 |       | 142.05 | .00   |    | 3490 | 37.468 |     | 3490   | 37.468 | .0000  |
| 323.919                     | 542.12 | 541.67 | 541.67 | 6097.51 |   | 132.18 | .037 | 429.08 | 14540.31 | 3124.65 |    | 3124.65 | 142.35 |       | 142.35 | .00   |    | 3489 | 37.461 |     | 3489   | 37.461 | .0000  |
| 338.919                     | 542.07 | 541.59 | 541.59 | 6097.45 |   | 137.74 | .039 | 430.01 | 14591.93 | 3267.30 |    | 3267.30 | 142.65 |       | 142.65 | .00   |    | 3489 | 37.454 |     | 3489   | 37.454 | .0000  |
| 353.919                     | 542.03 | 541.51 | 541.51 | 6097.39 |   | 143.28 | .041 | 430.93 | 14643.28 | 3410.25 |    | 3410.25 | 142.95 |       | 142.95 | .00   |    | 3489 | 37.446 |     | 3489   | 37.446 | .0000  |
| 368.919                     | 541.98 | 541.42 | 541.42 | 6097.33 |   | 148.81 | .042 | 431.86 | 14694.39 | 3553.51 |    | 3553.51 | 143.26 |       | 143.26 | .00   |    | 3489 | 37.439 |     | 3489   | 37.439 | .0000  |
| 383.919                     | 541.93 | 541.33 | 541.33 | 6097.26 |   | 154.31 | .044 | 432.78 | 14745.23 | 3697.08 |    | 3697.08 | 143.56 |       | 143.56 | .00   |    | 3489 | 37.431 |     | 3489   | 37.431 | .0000  |
| 398.919                     | 541.88 | 541.24 | 541.24 | 6097.20 |   | 159.79 | .045 | 433.71 | 14795.83 | 3840.94 |    | 3840.94 | 143.86 |       | 143.86 | .00   |    | 3489 | 37.424 |     | 3489   | 37.424 | .0000  |
| 403.048                     | 541.87 | 541.21 | 541.21 | 6097.18 |   | 161.30 | .046 | 433.66 | 14809.71 | 3880.60 |    | 3880.60 | 39.65  |       | 39.65  | .00   |    | 3489 | 37.416 |     | 3489   | 37.416 | .0000  |
| 418.048                     | 541.82 | 541.11 | 541.11 | 6097.10 |   | 167.50 | .048 | 432.10 | 14791.65 | 4024.38 |    | 4024.38 | 143.78 |       | 143.78 | .00   |    | 3489 | 37.414 |     | 3489   | 37.414 | .0000  |
| 427.051                     | 541.79 | 541.05 | 541.05 | 6097.05 |   | 171.23 | .049 | 430.98 | 14780.98 | 4110.39 |    | 4110.39 | 86.00  |       | 86.00  | .00   |    | 3489 | 37.408 |     | 3489   | 37.408 | .0000  |
| 427.061                     | 541.79 | 541.08 | 541.08 | 6097.10 |   | 167.68 | .048 | 200.70 | 15093.21 | 4110.39 |    | 4110.39 | .00    |       | .00    | .00   |    | 3489 | 37.433 |     | 3489   | 37.433 | .0000  |
| 442.061                     | 541.84 | 541.08 | 541.08 | 6097.02 |   | 173.60 | .049 | 55.53  | 14579.45 | 4110.76 |    | 4110.76 | .00    |       | .00    | .00   |    | 3488 | 37.434 |     | 3488   | 37.434 | .0000  |
| 457.061                     | 541.88 | 541.04 | 541.04 | 6096.89 |   | 182.93 | .052 | 311.76 | 14042.53 | 4171.90 |    | 4171.90 | 60.97  |       | 60.97  | .00   |    | 3488 | 37.406 |     | 3488   | 37.406 | .0000  |
| 463.204                     | 541.89 | 541.00 | 541.00 | 6096.81 |   | 188.15 | .053 | 416.76 | 13815.95 | 4221.44 |    | 4221.44 | 49.52  |       | 49.52  | .00   |    | 3488 | 37.365 |     | 3488   | 37.365 | .0000  |
| 476.204                     | 541.83 | 540.88 | 540.88 | 6096.73 |   | 193.80 | .055 | 417.27 | 13855.91 | 4359.07 |    | 4359.07 | 138.43 |       | 138.43 | .00   |    | 3488 | 37.344 |     | 3488   | 37.344 | .0000  |
| 493.204                     | 541.76 | 540.76 | 540.76 | 6096.64 |   | 199.43 | .057 | 417.84 | 13895.68 | 4498.48 |    | 4498.48 | 138.61 |       | 138.61 | .00   |    | 3488 | 37.335 |     | 3488   | 37.335 | .0000  |
| 508.204                     | 541.70 | 540.63 | 540.63 | 6096.55 |   | 205.04 | .058 | 418.41 | 13935.28 | 4637.27 |    | 4637.27 | 138.79 |       | 138.79 | .00   |    | 3487 | 37.325 |     | 3487   | 37.325 | .0000  |
| 523.204                     | 541.63 | 540.51 | 540.51 | 6096.46 |   | 210.63 | .060 | 418.99 | 13974.49 | 4776.24 |    | 4776.24 | 138.97 |       | 138.97 | .00   |    | 3487 | 37.315 |     | 3487   | 37.315 | .0000  |
| 538.204                     | 541.56 | 540.38 | 540.38 | 6096.37 |   | 216.21 | .061 | 419.56 | 14013.92 | 4915.38 |    | 4915.38 | 139.14 |       | 139.14 | .00   |    | 3487 | 37.304 |     | 3487   | 37.304 | .0000  |
| 553.204                     | 541.48 | 540.24 | 540.24 | 6096.27 |   | 221.78 | .063 | 420.13 | 14052.97 | 5054.70 |    | 5054.70 | 139.32 |       | 139.32 | .00   |    | 3486 | 37.294 |     | 3486   | 37.294 | .0000  |
| 568.204                     | 541.41 | 540.10 | 540.10 | 6096.17 |   | 227.32 | .064 | 420.70 | 14091.85 | 5194.20 |    | 5194.20 | 139.50 |       | 139.50 | .00   |    | 3486 | 37.284 |     | 3486   | 37.284 | .0000  |
| 583.204                     | 541.33 | 539.96 | 539.96 | 6096.07 |   | 232.85 | .066 | 421.27 | 14130.54 | 5333.87 |    | 5333.87 | 139.67 |       | 139.67 | .00   |    | 3486 | 37.273 |     | 3486   | 37.273 | .0000  |
| 598.204                     | 541.25 | 539.82 | 539.82 | 6095.97 |   | 238.37 | .068 | 421.84 | 14169.25 | 5473.72 |    | 5473.72 | 139.85 |       | 139.85 | .00   |    | 3485 | 37.263 |     | 3485   | 37.263 | .0000  |
| 613.204                     | 541.17 | 539.67 | 539.67 | 6095.87 |   | 243.87 | .069 | 422.42 | 14207.38 | 5613.75 |    | 5613.75 | 140.03 |       | 140.03 | .00   |    | 3485 | 37.252 |     | 3485   | 37.252 | .0000  |

|          |        |         |         |        |      |        |          |         |        |     |       |        |       |      |
|----------|--------|---------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|------|
| 643-204  | 541-09 | 539-52  | 6095-76 | 249-35 | .071 | 422-99 | 14245-53 | 5753-96 | 140-20 | -00 | .3485 | 37-241 | .0000 | .000 |
| 643-204  | 541-01 | 539-37  | 6095-65 | 254-83 | .072 | 423-56 | 14283-50 | 5894-33 | 140-38 | -00 | .3484 | 37-231 | .0000 | .000 |
| 650-204  | 540-92 | 539-21  | 6095-54 | 260-29 | .074 | 424-13 | 14321-29 | 6034-89 | 140-55 | -00 | .3484 | 37-220 | .0000 | .000 |
| 673-204  | 540-83 | 539-05  | 6095-43 | 265-73 | .075 | 424-70 | 14358-90 | 6175-62 | 140-73 | -00 | .3484 | 37-209 | .0000 | .000 |
| 680-204  | 540-74 | 538-89  | 6095-32 | 271-16 | .077 | 425-27 | 14396-33 | 6314-52 | 140-90 | -00 | .3483 | 37-198 | .0000 | .000 |
| 703-204  | 540-65 | 538-72  | 6095-20 | 276-59 | .078 | 425-84 | 14433-58 | 6457-60 | 141-08 | -00 | .3483 | 37-187 | .0000 | .000 |
| 710-204  | 540-56 | 538-55  | 6095-08 | 282-00 | .080 | 426-42 | 14470-65 | 6590-86 | 141-25 | -00 | .3483 | 37-176 | .0000 | .000 |
| 720-171  | 540-50 | 538-46  | 6095-02 | 284-87 | .081 | 426-72 | 14490-32 | 6674-15 | 75-28  | -00 | .3482 | 37-165 | .0000 | .000 |
| 741-191  | 540-38 | 538-29  | 6094-94 | 288-33 | .082 | 428-70 | 14625-32 | 6815-91 | 141-76 | -01 | .3482 | 37-158 | .0000 | .000 |
| 740-336  | 540-34 | 538-23  | 6094-92 | 289-51 | .082 | 429-38 | 14671-18 | 6864-68 | 43-77  | -00 | .3482 | 37-152 | .0000 | .000 |
| 746-346  | 540-33 | 538-40  | 6095-10 | 277-45 | .079 | 75-92  | 15334-75 | 6864-68 | .00    | -00 | .3482 | 37-202 | .0000 | .000 |
| 761-346  | 540-39 | 538-39  | 6095-09 | 281-85 | .080 | 79-80  | 15067-84 | 6865-74 | .73    | -32 | .3482 | 37-203 | .0000 | .000 |
| 770-346  | 540-43 | 538-33  | 6094-94 | 288-59 | .082 | 235-51 | 14830-09 | 6976-19 | 52-25  | -20 | .3482 | 37-178 | .0000 | .000 |
| 791-346  | 540-44 | 538-21  | 6094-73 | 297-77 | .084 | 391-23 | 14591-51 | 7024-13 | 103-85 | -09 | .3482 | 37-148 | .0000 | .000 |
| 809-431  | 540-43 | 538-17  | 6094-67 | 300-27 | .085 | 427-41 | 14535-96 | 7053-65 | 31-51  | -00 | .3482 | 37-112 | .0000 | .000 |
| 824-631  | 540-32 | 537-98  | 6094-55 | 304-99 | .087 | 428-38 | 14603-46 | 7195-45 | 141-79 | -01 | .3482 | 37-106 | .0000 | .000 |
| 839-631  | 540-21 | 537-80  | 6094-44 | 309-70 | .088 | 429-35 | 14673-39 | 7337-57 | 142-11 | -01 | .3461 | 37-096 | .0000 | .000 |
| 854-631  | 540-09 | 537-61  | 6094-33 | 314-39 | .089 | 430-32 | 14736-77 | 7480-00 | 142-42 | -01 | .3481 | 37-086 | .0000 | .000 |
| 864-781  | 539-98 | 537-42  | 6094-21 | 319-06 | .091 | 431-29 | 14802-37 | 7622-26 | 142-26 | -01 | .3481 | 37-075 | .0000 | .000 |
| 884-781  | 539-84 | 537-22  | 6094-12 | 322-50 | .091 | 435-66 | 14925-68 | 7765-94 | 143-65 | -03 | .3483 | 37-065 | .0000 | .000 |
| 899-781  | 539-70 | 537-03  | 6094-03 | 326-06 | .093 | 440-13 | 15044-27 | 7911-23 | 145-23 | -06 | .3486 | 37-071 | .0000 | .000 |
| 914-781  | 539-56 | 536-83  | 6093-94 | 329-74 | .094 | 444-60 | 15156-14 | 8058-22 | 146-90 | -09 | .3492 | 37-076 | .0000 | .000 |
| 929-781  | 539-42 | 536-62  | 6093-84 | 333-54 | .095 | 449-07 | 15267-28 | 8207-50 | 148-66 | -12 | .3499 | 37-082 | .0000 | .000 |
| 944-781  | 539-34 | 536-52  | 6093-79 | 335-58 | .095 | 451-34 | 15322-52 | 8285-47 | 78-29  | -18 | .3504 | 36-717 | .0000 | .000 |
| 959-781  | 539-29 | 536-52  | 6093-87 | 332-37 | .094 | .00    | 15471-41 | 8285-68 | .00    | -21 | .3504 | 35-948 | .0000 | .000 |
| 974-781  | 539-26 | 536-52  | 6093-97 | 328-46 | .093 | .00    | 15566-40 | 8286-08 | .00    | -20 | .3504 | 35-178 | .0000 | .000 |
| 989-781  | 539-22 | 536-52  | 6094-02 | 326-68 | .093 | .00    | 15656-66 | 8286-10 | .00    | -22 | .3504 | 34-909 | .0000 | .000 |
| 1004-781 | 539-17 | 536-52  | 6094-06 | 325-03 | .092 | .00    | 15742-20 | 8286-34 | .00    | -25 | .3504 | 33-640 | .0000 | .000 |
| 1019-781 | 539-14 | 536-52  | 6094-10 | 323-49 | .092 | .00    | 15823-32 | 8286-61 | .00    | -27 | .3504 | 32-871 | .0000 | .000 |
| 1034-781 | 539-12 | 536-52  | 6094-14 | 322-05 | .091 | .00    | 15899-12 | 8286-91 | .00    | -29 | .3504 | 32-101 | .0000 | .000 |
| 1040-791 | 539-11 | 536-52  | 6094-15 | 321-51 | .091 | .00    | 15970-50 | 8287-22 | .00    | -31 | .3504 | 31-332 | .0000 | .000 |
| 1055-791 | 539-12 | 536-52  | 6094-13 | 322-09 | .091 | .00    | 15997-77 | 8287-35 | .00    | -13 | .3504 | 31-024 | .0000 | .000 |
| 1070-791 | 539-13 | 536-52  | 6094-12 | 322-66 | .092 | .00    | 15969-84 | 8287-68 | .00    | -33 | .3504 | 30-483 | .0000 | .000 |
| 1084-171 | 539-14 | 536-52  | 6094-11 | 323-18 | .092 | .00    | 15941-89 | 8288-02 | .00    | -33 | .3504 | 29-942 | .0000 | .000 |
| AFT(A)   | 533-86 | 509-69  | 6057-56 | 994-97 | .283 | .000   | 15916-89 | 8288-31 | .00    | -30 | .3504 | 29-459 | .0000 | .000 |
| AFT(B)   | 533-85 | 6095-49 |         | -02    | .000 | .000   | 15823-73 | 8289-31 | .00    | -61 | .3494 | 29-460 | .0000 | .000 |
|          |        |         |         |        |      |        | 10413-12 | .39     | .00    | -39 | .3491 | 20-670 | .0000 | .000 |

| SLOT                                                                 | PO          | P                | T         | U           | AP        | OMDOT  | AB      | R8      | DELTA  | MSLOT     |        |      |        |        |        |
|----------------------------------------------------------------------|-------------|------------------|-----------|-------------|-----------|--------|---------|---------|--------|-----------|--------|------|--------|--------|--------|
| INTERFACE                                                            | PSIA        | PSIA             | DEG. R    | FT/SEC      | SQ. IN.   | LB/SEC | SQ. IN. | IN/SEC  | TAU    |           |        |      |        |        |        |
| LOCATION                                                             | IN.         |                  |           |             |           |        |         |         | IN.    |           |        |      |        |        |        |
|                                                                      |             |                  |           |             |           |        |         |         |        | LB/SEC    |        |      |        |        |        |
| FOREWARD                                                             | 1.1676+02   | 5.4251+02        | 6.0781+02 | 4.5720+01   | 1.6460+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000 | 1.2251+03 |        |      |        |        |        |
| AFT                                                                  | 1.1677+02   | 5.4251+02        | 6.0781+02 | 4.5720+01   | 1.6460+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000 | 1.2251+03 |        |      |        |        |        |
| GAS BUILDUP IN SLOT, DM/DT = -2.3213-04                              |             |                  |           |             |           |        |         |         |        |           |        |      |        |        |        |
| FOREWARD                                                             | 4.2705+02   | 5.4179+02        | 6.0970+02 | 1.5449+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000 | 4.1104+03 |        |      |        |        |        |
| AFT                                                                  | 4.2706+02   | 5.4182+02        | 6.0971+02 | 1.5440+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000 | 4.1104+03 |        |      |        |        |        |
| GAS BUILDUP IN SLOT, DM/DT = -2.3084-04                              |             |                  |           |             |           |        |         |         |        |           |        |      |        |        |        |
| FOREWARD                                                             | 7.4634+02   | 5.4034+02        | 6.0949+02 | 2.5926+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000 | 6.8647+03 |        |      |        |        |        |
| AFT                                                                  | 7.4635+02   | 5.4050+02        | 6.0952+02 | 2.5919+02   | 1.6383+04 | 0.0000 | 0.0000  | 0.0000  | 0.0000 | 6.8647+03 |        |      |        |        |        |
| GAS BUILDUP IN SLOT, DM/DT = -2.3111-04                              |             |                  |           |             |           |        |         |         |        |           |        |      |        |        |        |
| *PARTITION*                                                          | TIME=99.50  | IS=1 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.73  | AINCHI= | 914.78 | DELZ=     | 3.947  | ALP= | 451.44 | ALPHI= | 450.33 |
| *PARTITION*                                                          | TIME=99.50  | IS=2 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 917.96  | AINCHI= | 914.78 | DELZ=     | 3.181  | ALP= | 451.46 | ALPHI= | 450.57 |
| *PARTITION*                                                          | TIME=99.50  | IS=3 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.11  | AINCHI= | 914.78 | DELZ=     | 3.330  | ALP= | 451.46 | ALPHI= | 450.53 |
| *PARTITION*                                                          | TIME=99.50  | IS=4 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.93  | AINCHI= | 914.78 | DELZ=     | 4.151  | ALP= | 451.44 | ALPHI= | 450.26 |
| *PARTITION*                                                          | TIME=99.50  | IS=5 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 917.92  | AINCHI= | 914.78 | DELZ=     | 5.135  | ALP= | 451.41 | ALPHI= | 449.95 |
| *PARTITION*                                                          | TIME=99.50  | IS=6 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 920.19  | AINCHI= | 914.78 | DELZ=     | 5.407  | ALP= | 451.40 | ALPHI= | 449.86 |
| *PARTITION*                                                          | TIME=99.50  | IS=7 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 923.14  | AINCHI= | 914.78 | DELZ=     | 5.354  | ALP= | 451.40 | ALPHI= | 449.88 |
| *PARTITION*                                                          | TIME=99.50  | IS=8 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 919.81  | AINCHI= | 914.78 | DELZ=     | 5.028  | ALP= | 451.41 | ALPHI= | 449.98 |
| *PARTITION*                                                          | TIME=99.50  | IS=1 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.73  | AINCHI= | 914.78 | DELZ=     | 3.947  | ALP= | 451.44 | ALPHI= | 450.33 |
| *PARTITION*                                                          | TIME=99.50  | IS=2 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 917.96  | AINCHI= | 914.78 | DELZ=     | 3.181  | ALP= | 451.46 | ALPHI= | 450.57 |
| *PARTITION*                                                          | TIME=99.50  | IS=3 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.11  | AINCHI= | 914.78 | DELZ=     | 3.330  | ALP= | 451.46 | ALPHI= | 450.53 |
| *PARTITION*                                                          | TIME=99.50  | IS=4 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.93  | AINCHI= | 914.78 | DELZ=     | 4.151  | ALP= | 451.44 | ALPHI= | 450.26 |
| *PARTITION*                                                          | TIME=99.50  | IS=5 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 920.19  | AINCHI= | 914.78 | DELZ=     | 5.135  | ALP= | 451.41 | ALPHI= | 449.95 |
| *PARTITION*                                                          | TIME=99.50  | IS=6 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 923.14  | AINCHI= | 914.78 | DELZ=     | 5.354  | ALP= | 451.40 | ALPHI= | 449.86 |
| *PARTITION*                                                          | TIME=99.50  | IS=7 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 919.81  | AINCHI= | 914.78 | DELZ=     | 5.028  | ALP= | 451.41 | ALPHI= | 449.98 |
| *PARTITION*                                                          | TIME=99.50  | IS=8 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 918.73  | AINCHI= | 914.78 | DELZ=     | 3.947  | ALP= | 451.44 | ALPHI= | 450.33 |
| SECTOR NO. 2      TAU= 37.4861      TAUMDP= 37.4861      TIME= 99.50 |             |                  |           |             |           |        |         |         |        |           |        |      |        |        |        |
| SECTOR NO. 3      TAU= 37.4861      TAUMDP= 37.4861      TIME= 99.50 |             |                  |           |             |           |        |         |         |        |           |        |      |        |        |        |
| *PARTITION*                                                          | TIME=100.00 | IS=2 ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW= | 914.58  | AINCHI= | 899.78 | DELZ=     | 14.801 | ALP= | 451.55 | ALPHI= | 447.18 |
| *PARTITION*                                                          | TIME=100.00 | IS=3 ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW= | 914.73  | AINCHI= | 899.78 | DELZ=     | 14.951 | ALP= | 451.55 | ALPHI= | 447.14 |
| *PARTITION*                                                          | TIME=100.00 | IS=1 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 915.34  | AINCHI= | 914.78 | DELZ=     | 5.58   | ALP= | 451.53 | ALPHI= | 451.43 |
| *PARTITION*                                                          | TIME=100.00 | IS=4 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 915.54  | AINCHI= | 914.78 | DELZ=     | 7.763  | ALP= | 451.53 | ALPHI= | 451.36 |
| *PARTITION*                                                          | TIME=100.00 | IS=5 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.54  | AINCHI= | 914.78 | DELZ=     | 17.755 | ALP= | 451.50 | ALPHI= | 451.04 |
| *PARTITION*                                                          | TIME=100.00 | IS=6 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.81  | AINCHI= | 914.78 | DELZ=     | 2.029  | ALP= | 451.49 | ALPHI= | 450.95 |
| *PARTITION*                                                          | TIME=100.00 | IS=7 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.76  | AINCHI= | 914.78 | DELZ=     | 1.976  | ALP= | 451.49 | ALPHI= | 450.97 |
| *PARTITION*                                                          | TIME=100.00 | IS=8 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.43  | AINCHI= | 914.78 | DELZ=     | 1.648  | ALP= | 451.50 | ALPHI= | 451.08 |
| *PARTITION*                                                          | TIME=100.00 | IS=2 ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW= | 914.58  | AINCHI= | 899.78 | DELZ=     | 14.801 | ALP= | 451.55 | ALPHI= | 447.18 |
| *PARTITION*                                                          | TIME=100.00 | IS=3 ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW= | 914.73  | AINCHI= | 899.78 | DELZ=     | 14.951 | ALP= | 451.55 | ALPHI= | 447.14 |
| *PARTITION*                                                          | TIME=100.00 | IS=1 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 915.34  | AINCHI= | 914.78 | DELZ=     | 5.58   | ALP= | 451.53 | ALPHI= | 451.43 |
| *PARTITION*                                                          | TIME=100.00 | IS=4 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 915.54  | AINCHI= | 914.78 | DELZ=     | 7.763  | ALP= | 451.53 | ALPHI= | 451.36 |
| *PARTITION*                                                          | TIME=100.00 | IS=5 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.54  | AINCHI= | 914.78 | DELZ=     | 17.755 | ALP= | 451.50 | ALPHI= | 451.04 |
| *PARTITION*                                                          | TIME=100.00 | IS=6 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.81  | AINCHI= | 914.78 | DELZ=     | 2.029  | ALP= | 451.49 | ALPHI= | 450.95 |
| *PARTITION*                                                          | TIME=100.00 | IS=7 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.76  | AINCHI= | 914.78 | DELZ=     | 1.976  | ALP= | 451.49 | ALPHI= | 450.97 |
| *PARTITION*                                                          | TIME=100.00 | IS=8 ZCALC( 70)= | 929.78    | ZCALC( 69)= | 914.78    | AINCW= | 916.43  | AINCHI= | 914.78 | DELZ=     | 1.648  | ALP= | 451.50 | ALPHI= | 451.08 |

PARTBN TIME=100.00 IS=6 ZCALC( 70)= 929.78 ZCALC( 69)= 914.78 AINCW= 916.81 AINCHI= 914.78 DELZ= 2.029 ALP=451.49 ALPHI=450.95  
 PARTBN TIME=100.00 IS=7 ZCALC( 70)= 929.78 ZCALC( 69)= 914.78 AINCW= 916.76 AINCHI= 914.78 DELZ= 1.976 ALP=451.49 ALPHI=450.97  
 PARTBN TIME=100.00 IS=8 ZCALC( 70)= 929.78 ZCALC( 69)= 914.78 AINCW= 916.43 AINCHI= 914.78 DELZ= 1.648 ALP=451.50 ALPHI=451.08

IGNITION TIME, TIME (S)

100.00000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 9421453.5     | 2118027.0    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 942055.5      | 2122658.5    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 63555.324     | 14287.805    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMDTI               | .11102230+10  | .24958807+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 255.08241     | 255.08241    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .11600470+10  | .26078913+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6270777     | 1.6270777    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 3725.7022     | 8213.7675    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SADOTN               | 45668.13      | 1006780.9    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MI                   | 34.109681     | 75.198975    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 509.41392     | 1123.0654    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 239.02931     | 370496.17    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 30.143099     | 1839444.8    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 48905.954     | 107808.15    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1218.7719     | 2686.9322    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1596604     | 1.1596604    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.831714     | 28.289087    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1558.2468     | 5112.3582    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .94886399-01  | .94886399-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .37346183+09  | 537.30946    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .48448846+11  | 70269.110    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 3.9035975     | 6050.5883    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .08438225-02  | .34818199    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .96446428     | 37.971035    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | .56274182     | 34340.613    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.541090     | 3328001.5    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3386.9803     | 6096.5645    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 235.12571     | 364445.58    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 295578391     | 1804984.2    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 258.17091     | 15754556.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .36453218+09  | 528.70924    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .46111258+11  | 66078.726    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(INI+1,1)         | .08443996-02  | .34825471    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(INI+2,1)         | .08366730-02  | .34790051    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(INI+1,1)        | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(INI+2,1)        | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(INI+2,3)        | 3385.4990     | 6093.8982    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5919242     | 2467.4874    |
| EXPANSION RATIO                                                 | EPR                  | 6.7519013     | 6.7519013    |
| PRESSURE RATIO                                                  | PEPO                 | .23350543-01  | .23350543-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLUPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA    | DEG. R | T | U      | H    | LP     | AP       | NDOT    | DWDOT  | LB/SEC | DM/DT  | IN/SEC | TAU    | RB | IN/SEC | RBTO | TAUTO. |
|-----------------------------|--------|--------|---------|--------|---|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|----|--------|------|--------|
|                             | PSIA   |        |         |        |   | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | LB/SEC | IN.    |        |    | IN.    |      |        |
| FORE                        | 537.31 | 537.31 | 6096.56 | 6.13   |   |        | .002 | 418.90 | 13963.50 | 137.59  | 133.59 | 133.59 | -4.00  | .3480  | 37.971 |    | .000   |      | .000   |
| 15.000                      | 537.31 | 537.33 | 6096.56 | 12.26  |   |        | .003 | 419.24 | 13901.68 | 276.37  | 138.80 | 138.80 | .02    | .3480  | 37.928 |    | .000   |      | .000   |
| 30.000                      | 537.30 | 537.30 | 6096.55 | 18.39  |   |        | .005 | 419.49 | 13999.83 | 415.23  | 138.88 | 138.88 | .02    | .3480  | 37.923 |    | .000   |      | .000   |
| 45.000                      | 537.30 | 537.28 | 6096.54 | 24.51  |   |        | .007 | 419.75 | 14017.95 | 554.17  | 138.97 | 138.97 | .02    | .3480  | 37.919 |    | .000   |      | .000   |
| 60.000                      | 537.29 | 537.27 | 6096.53 | 30.62  |   |        | .009 | 420.01 | 14036.03 | 693.20  | 139.05 | 139.05 | .02    | .3480  | 37.914 |    | .000   |      | .000   |
| 75.000                      | 537.28 | 537.25 | 6096.51 | 36.72  |   |        | .010 | 420.27 | 14054.17 | 832.31  | 139.13 | 139.13 | .02    | .3479  | 37.909 |    | .000   |      | .000   |
| 90.000                      | 537.27 | 537.23 | 6096.49 | 42.81  |   |        | .012 | 420.53 | 14072.00 | 971.50  | 139.22 | 139.22 | .02    | .3479  | 37.904 |    | .000   |      | .000   |
| 105.000                     | 537.26 | 537.20 | 6096.47 | 48.89  |   |        | .014 | 420.79 | 14090.06 | 1110.78 | 139.30 | 139.30 | .02    | .3479  | 37.899 |    | .000   |      | .000   |
| 116.761                     | 537.25 | 537.18 | 6096.45 | 53.65  |   |        | .015 | 420.99 | 14104.13 | 1220.04 | 109.28 | 109.28 | .02    | .3479  | 37.893 |    | .000   |      | .000   |
| 116.771                     | 537.25 | 537.17 | 6096.45 | 55.51  |   |        | .016 | 269.18 | 13631.69 | 1220.04 | .00    | .00    | .00    | .3479  | 37.894 |    | .000   |      | .000   |
| 131.771                     | 537.24 | 537.15 | 6096.43 | 59.20  |   |        | .017 | 352.62 | 13861.13 | 1323.04 | 102.95 | 102.95 | .00    | .3479  | 37.894 |    | .000   |      | .000   |
| 143.919                     | 537.22 | 537.12 | 6096.41 | 62.99  |   |        | .018 | 420.19 | 14047.24 | 1426.66 | 103.62 | 103.62 | .00    | .3479  | 37.887 |    | .000   |      | .000   |
| 158.919                     | 537.20 | 537.08 | 6096.38 | 68.88  |   |        | .020 | 421.11 | 14102.26 | 1565.93 | 139.29 | 139.29 | .02    | .3479  | 37.881 |    | .000   |      | .000   |
| 173.919                     | 537.18 | 537.04 | 6096.35 | 74.73  |   |        | .021 | 422.04 | 14157.02 | 1705.49 | 139.59 | 139.59 | .02    | .3479  | 37.875 |    | .000   |      | .000   |
| 188.919                     | 537.16 | 536.99 | 6096.31 | 80.55  |   |        | .023 | 422.96 | 14211.53 | 1845.36 | 139.89 | 139.89 | .02    | .3479  | 37.869 |    | .000   |      | .000   |
| 203.919                     | 537.13 | 536.94 | 6096.27 | 86.35  |   |        | .024 | 423.88 | 14265.77 | 1985.53 | 140.19 | 140.19 | .02    | .3479  | 37.863 |    | .000   |      | .000   |
| 218.919                     | 537.10 | 536.89 | 6096.23 | 92.12  |   |        | .026 | 424.81 | 14319.76 | 2126.01 | 140.49 | 140.49 | .02    | .3479  | 37.856 |    | .000   |      | .000   |
| 233.919                     | 537.07 | 536.83 | 6096.19 | 97.86  |   |        | .028 | 425.73 | 14373.40 | 2266.78 | 140.79 | 140.79 | .02    | .3478  | 37.850 |    | .000   |      | .000   |
| 248.919                     | 537.04 | 536.77 | 6096.15 | 103.58 |   |        | .029 | 426.66 | 14426.95 | 2407.85 | 141.09 | 141.09 | .02    | .3478  | 37.844 |    | .000   |      | .000   |
| 263.919                     | 537.01 | 536.71 | 6096.10 | 109.27 |   |        | .031 | 427.58 | 14480.16 | 2549.23 | 141.39 | 141.39 | .02    | .3478  | 37.837 |    | .000   |      | .000   |
| 278.919                     | 536.98 | 536.64 | 6096.05 | 114.94 |   |        | .033 | 428.50 | 14533.11 | 2690.90 | 141.69 | 141.69 | .02    | .3478  | 37.830 |    | .000   |      | .000   |
| 293.919                     | 536.94 | 536.57 | 6096.00 | 120.58 |   |        | .034 | 429.43 | 14585.80 | 2832.88 | 141.99 | 141.99 | .02    | .3478  | 37.823 |    | .000   |      | .000   |
| 308.919                     | 536.90 | 536.50 | 6095.94 | 126.23 |   |        | .036 | 430.35 | 14638.23 | 2975.15 | 142.30 | 142.30 | .02    | .3478  | 37.816 |    | .000   |      | .000   |
| 323.919                     | 536.86 | 536.42 | 6095.89 | 131.79 |   |        | .037 | 431.28 | 14690.41 | 3117.73 | 142.60 | 142.60 | .02    | .3478  | 37.809 |    | .000   |      | .000   |
| 338.919                     | 536.82 | 536.35 | 6095.83 | 137.36 |   |        | .039 | 432.20 | 14742.32 | 3260.62 | 142.90 | 142.90 | .02    | .3478  | 37.802 |    | .000   |      | .000   |
| 353.919                     | 536.77 | 536.26 | 6095.77 | 142.92 |   |        | .041 | 433.13 | 14793.98 | 3403.80 | 143.20 | 143.20 | .02    | .3478  | 37.795 |    | .000   |      | .000   |
| 368.919                     | 536.73 | 536.18 | 6095.70 | 148.45 |   |        | .042 | 434.05 | 14845.07 | 3547.29 | 143.51 | 143.51 | .02    | .3477  | 37.788 |    | .000   |      | .000   |
| 383.919                     | 536.68 | 536.09 | 6095.64 | 153.96 |   |        | .044 | 434.97 | 14896.51 | 3691.08 | 143.81 | 143.81 | .02    | .3477  | 37.780 |    | .000   |      | .000   |
| 398.919                     | 536.63 | 536.99 | 6095.57 | 159.45 |   |        | .045 | 435.90 | 14947.39 | 3835.17 | 144.11 | 144.11 | .02    | .3477  | 37.773 |    | .000   |      | .000   |
| 413.919                     | 536.58 | 536.92 | 6095.50 | 164.94 |   |        | .046 | 436.82 | 14998.15 | 3979.49 | 144.41 | 144.41 | .02    | .3477  | 37.765 |    | .000   |      | .000   |
| 428.919                     | 536.53 | 536.87 | 6095.43 | 170.43 |   |        | .047 | 437.74 | 15048.65 | 4124.03 | 144.71 | 144.71 | .02    | .3477  | 37.757 |    | .000   |      | .000   |
| 443.919                     | 536.48 | 536.81 | 6095.36 | 175.91 |   |        | .048 | 438.66 | 15099.16 | 4268.78 | 145.01 | 145.01 | .02    | .3477  | 37.750 |    | .000   |      | .000   |
| 458.919                     | 536.43 | 536.74 | 6095.29 | 181.39 |   |        | .049 | 439.58 | 15149.67 | 4413.53 | 145.31 | 145.31 | .02    | .3477  | 37.742 |    | .000   |      | .000   |
| 473.919                     | 536.38 | 536.67 | 6095.22 | 186.87 |   |        | .050 | 440.50 | 15200.18 | 4558.28 | 145.61 | 145.61 | .02    | .3477  | 37.734 |    | .000   |      | .000   |
| 488.919                     | 536.33 | 536.62 | 6095.15 | 192.35 |   |        | .051 | 441.42 | 15250.69 | 4703.03 | 145.91 | 145.91 | .02    | .3477  | 37.726 |    | .000   |      | .000   |
| 503.919                     | 536.28 | 536.57 | 6095.08 | 197.83 |   |        | .052 | 442.34 | 15301.20 | 4847.78 | 146.21 | 146.21 | .02    | .3477  | 37.718 |    | .000   |      | .000   |
| 518.919                     | 536.23 | 536.52 | 6095.01 | 203.31 |   |        | .053 | 443.26 | 15351.71 | 4992.53 | 146.51 | 146.51 | .02    | .3477  | 37.710 |    | .000   |      | .000   |
| 533.919                     | 536.18 | 536.47 | 6094.94 | 208.79 |   |        | .054 | 444.18 | 15402.22 | 5137.28 | 146.81 | 146.81 | .02    | .3477  | 37.702 |    | .000   |      | .000   |
| 548.919                     | 536.13 | 536.42 | 6094.87 | 214.27 |   |        | .055 | 445.10 | 15452.73 | 5282.03 | 147.11 | 147.11 | .02    | .3477  | 37.694 |    | .000   |      | .000   |
| 563.919                     | 536.08 | 536.37 | 6094.80 | 219.75 |   |        | .056 | 446.02 | 15503.24 | 5426.78 | 147.41 | 147.41 | .02    | .3477  | 37.686 |    | .000   |      | .000   |
| 578.919                     | 536.03 | 536.32 | 6094.73 | 225.23 |   |        | .057 | 446.94 | 15553.75 | 5571.53 | 147.71 | 147.71 | .02    | .3477  | 37.678 |    | .000   |      | .000   |
| 593.919                     | 535.98 | 536.27 | 6094.66 | 230.71 |   |        | .058 | 447.86 | 15604.26 | 5716.28 | 148.01 | 148.01 | .02    | .3477  | 37.670 |    | .000   |      | .000   |
| 608.919                     | 535.93 | 536.22 | 6094.59 | 236.19 |   |        | .059 | 448.78 | 15654.77 | 5861.03 | 148.31 | 148.31 | .02    | .3477  | 37.662 |    | .000   |      | .000   |
| 623.919                     | 535.88 | 536.17 | 6094.52 | 241.67 |   |        | .060 | 449.70 | 15705.28 | 6005.78 | 148.61 | 148.61 | .02    | .3477  | 37.654 |    | .000   |      | .000   |
| 638.919                     | 535.83 | 536.12 | 6094.45 | 247.15 |   |        | .061 | 450.62 | 15755.79 | 6150.53 | 148.91 | 148.91 | .02    | .3477  | 37.646 |    | .000   |      | .000   |
| 653.919                     | 535.78 | 536.07 | 6094.38 | 252.63 |   |        | .062 | 451.54 | 15806.30 | 6295.28 | 149.21 | 149.21 | .02    | .3477  | 37.638 |    | .000   |      | .000   |
| 668.919                     | 535.73 | 536.02 | 6094.31 | 258.11 |   |        | .063 | 452.46 | 15856.81 | 6440.03 | 149.51 | 149.51 | .02    | .3477  | 37.630 |    | .000   |      | .000   |
| 683.919                     | 535.68 | 535.97 | 6094.24 | 263.59 |   |        | .064 | 453.38 | 15907.32 | 6584.78 | 149.81 | 149.81 | .02    | .3477  | 37.622 |    | .000   |      | .000   |
| 698.919                     | 535.63 | 535.92 | 6094.17 | 269.07 |   |        | .065 | 454.30 | 15957.83 | 6729.53 | 150.11 | 150.11 | .02    | .3477  | 37.614 |    | .000   |      | .000   |
| 713.919                     | 535.58 | 535.87 | 6094.10 | 274.55 |   |        | .066 | 455.22 | 16008.34 | 6874.28 | 150.41 | 150.41 | .02    | .3477  | 37.606 |    | .000   |      | .000   |
| 728.919                     | 535.53 | 535.82 | 6094.03 | 280.03 |   |        | .067 | 456.14 | 16058.85 | 7019.03 | 150.71 | 150.71 | .02    | .3477  | 37.598 |    | .000   |      | .000   |
| 743.919                     | 535.48 | 535.77 | 6093.96 | 285.51 |   |        | .068 | 457.06 | 16109.36 | 7163.78 | 151.01 | 151.01 | .02    | .3477  | 37.590 |    | .000   |      | .000   |
| 758.919                     | 535.43 | 535.72 | 6093.89 | 290.99 |   |        | .069 | 457.98 | 16159.87 | 7308.53 | 151.31 | 151.31 | .02    | .3477  | 37.582 |    | .000   |      | .000   |
| 773.919                     | 535.38 | 535.67 | 6093.82 | 296.47 |   |        | .070 | 458.90 | 16210.38 | 7453.28 | 151.61 | 151.61 | .02    | .3477  | 37.574 |    | .000   |      | .000   |
| 788.919                     | 535.33 | 535.62 | 6093.75 | 301.95 |   |        | .071 | 459.82 | 16260.89 | 7598.03 | 151.91 | 151.91 | .02    | .3477  | 37.566 |    | .000   |      | .000   |
| 803.919                     | 535.28 | 535.57 | 6093.68 | 307.43 |   |        | .072 | 460.74 | 16311.40 | 7742.78 | 152.21 | 152.21 | .02    | .3477  | 37.558 |    | .000   |      | .000   |
| 818.919                     | 535.23 | 535.52 | 6093.61 | 312.91 |   |        | .073 | 461.66 | 16361.91 | 7887.53 | 152.51 | 152.51 | .02    | .3477  | 37.550 |    | .000   |      | .000   |
| 833.919                     | 535.18 | 535.47 | 6093.54 | 318.39 |   |        | .074 | 462.58 | 16412.42 | 8032.28 | 152.81 | 152.81 | .02    | .3477  | 37.542 |    | .000   |      | .000   |
| 848.919                     | 535.13 | 535.42 | 6093.47 | 323.87 |   |        | .075 | 463.50 | 16462.93 | 8177.03 | 153.11 | 153.11 | .02    | .3477  | 37.534 |    | .000   |      | .000   |
| 863.919                     | 535.08 | 535.37 | 6093.40 | 329.35 |   |        | .076 | 464.42 | 16513.44 | 8321.78 | 153.41 | 153.41 | .02    | .3477  | 37.526 |    | .000   |      | .000   |
| 878.919                     | 535.03 | 535.32 | 6093.33 | 334.83 |   |        | .077 | 465.34 | 16563.95 | 8466.53 | 153.71 | 153.71 | .02    | .3477  | 37.518 |    | .000   |      | .000   |
| 893.919                     | 534.98 | 535.27 | 6093.26 | 340.31 |   |        | .078 | 466.26 | 16614.46 | 8611.28 | 154.01 | 154.01 | .02    | .3477  | 37.510 |    | .000   |      | .000   |
| 908.919                     | 534.93 | 535.22 | 6093.19 | 345.79 |   |        | .079 | 467.18 | 16664.97 | 8756.03 | 154.31 | 154.31 | .02    | .3477  | 37.502 |    | .000   |      | .000   |
| 923.919                     | 534.88 | 535.17 | 6093.12 | 351.27 |   |        | .080 | 468.10 | 16715.48 | 8900.78 | 154.61 | 154.61 | .02    | .3477  | 37.494 |    | .000   |      |        |



|          |        |        |         |        |      |        |          |         |        |     |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-----|-------|--------|-------|
| 628.204  | 535.82 | 534.28 | 6094.14 | 248.96 | .071 | 425.18 | 14393.28 | 5749.04 | 140.44 | .02 | .3473 | 37.590 | .0000 |
| 643.204  | 535.74 | 534.12 | 6094.03 | 254.45 | .072 | 425.75 | 14431.43 | 5889.64 | 140.62 | .02 | .3472 | 37.579 | .0000 |
| 656.204  | 535.65 | 533.97 | 6093.92 | 259.91 | .074 | 426.32 | 14469.39 | 6030.41 | 140.80 | .02 | .3472 | 37.568 | .0000 |
| 673.204  | 535.57 | 533.81 | 6093.81 | 265.37 | .075 | 426.89 | 14507.17 | 6171.37 | 140.97 | .02 | .3472 | 37.557 | .0000 |
| 688.204  | 535.48 | 533.65 | 6093.69 | 270.81 | .077 | 427.46 | 14544.77 | 6312.51 | 141.15 | .02 | .3471 | 37.546 | .0000 |
| 703.204  | 535.39 | 533.48 | 6093.58 | 276.25 | .078 | 428.03 | 14582.19 | 6453.82 | 141.33 | .02 | .3471 | 37.535 | .0000 |
| 718.204  | 535.29 | 533.32 | 6093.46 | 281.67 | .080 | 428.60 | 14619.42 | 6595.31 | 141.51 | .02 | .3471 | 37.524 | .0000 |
| 726.191  | 535.24 | 533.23 | 6093.43 | 284.55 | .081 | 428.91 | 14639.17 | 6670.72 | 75.42  | .01 | .3471 | 37.513 | .0000 |
| 741.191  | 535.12 | 533.05 | 6093.32 | 280.03 | .082 | 430.88 | 14774.85 | 6812.71 | 142.01 | .02 | .3471 | 37.506 | .0000 |
| 746.336  | 535.08 | 532.99 | 6093.29 | 289.22 | .082 | 431.56 | 14820.95 | 6861.56 | 48.86  | .00 | .3471 | 37.500 | .0000 |
| 745.346  | 535.08 | 533.11 | 6093.40 | 280.58 | .080 | 429.59 | 15274.22 | 6861.56 | .00    | .00 | .3471 | 37.550 | .0000 |
| 761.346  | 535.12 | 533.11 | 6093.41 | 283.97 | .081 | 64.12  | 15092.64 | 6861.86 | .00    | .00 | .3471 | 37.551 | .0000 |
| 776.346  | 535.15 | 533.06 | 6093.28 | 289.49 | .082 | 227.84 | 14910.43 | 6910.27 | 48.22  | .00 | .3471 | 37.526 | .0000 |
| 791.346  | 535.14 | 532.93 | 6093.10 | 297.49 | .084 | 391.56 | 14727.59 | 7012.64 | 102.29 | .00 | .3470 | 37.496 | .0000 |
| 794.831  | 535.13 | 532.89 | 6093.05 | 299.71 | .085 | 429.60 | 14685.02 | 7044.14 | 31.51  | .00 | .3470 | 37.460 | .0000 |
| 809.831  | 535.02 | 532.71 | 6092.94 | 304.44 | .086 | 430.57 | 14752.86 | 7106.71 | 142.04 | .01 | .3470 | 37.454 | .0000 |
| 824.831  | 534.91 | 532.53 | 6092.82 | 309.17 | .088 | 431.54 | 14820.74 | 7328.51 | 142.36 | .01 | .3470 | 37.444 | .0000 |
| 839.831  | 534.79 | 532.34 | 6092.71 | 313.88 | .089 | 432.51 | 14886.84 | 7471.18 | 142.68 | .01 | .3470 | 37.433 | .0000 |
| 854.781  | 534.68 | 532.15 | 6092.59 | 318.56 | .090 | 433.48 | 14952.76 | 7613.69 | 142.52 | .01 | .3470 | 37.423 | .0000 |
| 869.781  | 534.55 | 531.96 | 6092.50 | 322.36 | .091 | 437.85 | 15061.32 | 7757.62 | 143.93 | .00 | .3472 | 37.413 | .0000 |
| 884.781  | 534.41 | 531.76 | 6092.40 | 326.26 | .093 | 442.32 | 15165.62 | 7903.18 | 145.53 | .00 | .3476 | 37.419 | .0000 |
| 899.781  | 534.28 | 531.57 | 6092.29 | 330.28 | .094 | 446.80 | 15265.66 | 8050.49 | 147.24 | .00 | .3483 | 37.425 | .0000 |
| 914.781  | 534.14 | 531.38 | 6092.19 | 334.41 | .095 | 451.24 | 15361.25 | 8199.32 | 148.74 | .00 | .3492 | 37.430 | .0000 |
| 929.781  | 534.03 | 531.35 | 6092.19 | 334.25 | .095 | 338.63 | 15389.88 | 8210.34 | 10.87  | .00 | .3492 | 35.948 | .0000 |
| 944.781  | 534.07 | 531.35 | 6092.28 | 331.03 | .094 | .00    | 15545.21 | 8210.64 | .00    | .00 | .3492 | 35.178 | .0000 |
| 959.781  | 534.04 | 531.35 | 6092.32 | 329.28 | .093 | .00    | 15623.20 | 8210.84 | .00    | .00 | .3492 | 34.409 | .0000 |
| 974.781  | 534.02 | 531.35 | 6092.36 | 327.64 | .093 | .00    | 15721.93 | 8210.84 | .00    | .00 | .3492 | 33.640 | .0000 |
| 989.781  | 533.99 | 531.35 | 6092.40 | 326.10 | .093 | .00    | 15776.40 | 8211.06 | .00    | .00 | .3492 | 32.871 | .0000 |
| 1004.781 | 533.97 | 531.35 | 6092.44 | 324.67 | .092 | .00    | 15846.61 | 8211.30 | .00    | .00 | .3492 | 32.101 | .0000 |
| 1019.781 | 533.95 | 531.35 | 6092.47 | 323.33 | .092 | .00    | 15912.56 | 8211.56 | .00    | .00 | .3492 | 31.332 | .0000 |
| 1034.781 | 533.93 | 531.35 | 6092.50 | 322.10 | .091 | .00    | 15974.25 | 8211.85 | .00    | .00 | .3492 | 31.024 | .0000 |
| 1049.791 | 533.92 | 531.35 | 6092.52 | 321.63 | .091 | .00    | 15997.77 | 8211.97 | .00    | .00 | .3492 | 30.483 | .0000 |
| 1064.791 | 533.93 | 531.35 | 6092.50 | 322.20 | .091 | .00    | 15969.84 | 8212.28 | .00    | .00 | .3492 | 29.942 | .0000 |
| 1079.791 | 533.94 | 531.35 | 6092.49 | 322.78 | .092 | .00    | 15941.80 | 8212.58 | .00    | .00 | .3492 | 29.459 | .0000 |
| 1084.171 | 533.95 | 531.35 | 6092.47 | 323.30 | .092 | .00    | 15918.89 | 8212.85 | .00    | .00 | .3492 | 29.460 | .0000 |
| AFT(A)   | 528.71 | 504.75 | 6055.93 | 995.40 | .283 | .0000  | 15823.73 | 8213.77 | .00    | .00 | .3482 | 29.460 | .0000 |
| AFT(O)   | 528.70 | 528.70 | 6093.90 | .00    | .000 | .0000  | 10413.12 | .36     | .00    | .00 | .3479 | 29.670 | .0000 |



|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PD<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | PSLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+02                            | 5.3725+02  | 5.3718+02 | 6.0965+03   | 4.5968+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.2200+03       |
| AFT     | 1.1677+02                            | 5.3725+02  | 5.3717+02 | 6.0964+03   | 4.5966+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.2200+03       |

GAS BUILDUP IN SLOT, DW/DT = -2.1227-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 5.3654+02 | 5.3581+02 | 6.0954+03 | 1.5577+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1051+03 |
| AFT     | 4.2706+02 | 5.3655+02 | 5.3582+02 | 6.0954+03 | 1.5576+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.1051+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.1108-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 5.3508+02 | 5.3299+02 | 6.0933+03 | 2.6165+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8614+03 |
| AFT     | 7.4635+02 | 5.3520+02 | 5.3311+02 | 6.0935+03 | 2.6159+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.8616+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.1139-04

|                                       |          |              |        |        |         |          |         |        |        |      |        |        |        |
|---------------------------------------|----------|--------------|--------|--------|---------|----------|---------|--------|--------|------|--------|--------|--------|
| WEB BURNOUT INCREMENT LOCATION =      | 914.7810 | SECTOR NO. = | 1      | TAU =  | 37.4861 | TAUWDP = | 37.4861 | TIME = | 100.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 914.7810 | SECTOR NO. = | 4      | TAU =  | 37.4861 | TAUWDP = | 37.4861 | TIME = | 100.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 914.7810 | SECTOR NO. = | 5      | TAU =  | 37.4861 | TAUWDP = | 37.4861 | TIME = | 100.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 914.7810 | SECTOR NO. = | 6      | TAU =  | 37.4861 | TAUWDP = | 37.4861 | TIME = | 100.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 914.7810 | SECTOR NO. = | 7      | TAU =  | 37.4861 | TAUWDP = | 37.4861 | TIME = | 100.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 914.7810 | SECTOR NO. = | 8      | TAU =  | 37.4861 | TAUWDP = | 37.4861 | TIME = | 100.00 |      |        |        |        |
| *PARTBN* TIME=100.50 IS=1 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 911.97  | AINCHI=  | 899.78  | DELZ=  | 12.188 | ALP= | 451.62 | ALPHI= | 448.04 |
| *PARTBN* TIME=100.50 IS=2 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 911.21  | AINCHI=  | 899.78  | DELZ=  | 11.427 | ALP= | 451.64 | ALPHI= | 448.28 |
| *PARTBN* TIME=100.50 IS=3 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 911.36  | AINCHI=  | 899.78  | DELZ=  | 11.578 | ALP= | 451.64 | ALPHI= | 448.24 |
| *PARTBN* TIME=100.50 IS=4 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 912.17  | AINCHI=  | 899.78  | DELZ=  | 12.393 | ALP= | 451.62 | ALPHI= | 447.98 |
| *PARTBN* TIME=100.50 IS=5 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.17  | AINCHI=  | 899.78  | DELZ=  | 13.386 | ALP= | 451.59 | ALPHI= | 447.68 |
| *PARTBN* TIME=100.50 IS=6 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.44  | AINCHI=  | 899.78  | DELZ=  | 13.661 | ALP= | 451.58 | ALPHI= | 447.59 |
| *PARTBN* TIME=100.50 IS=7 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.39  | AINCHI=  | 899.78  | DELZ=  | 13.607 | ALP= | 451.58 | ALPHI= | 447.60 |
| *PARTBN* TIME=100.50 IS=8 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.06  | AINCHI=  | 899.78  | DELZ=  | 13.279 | ALP= | 451.59 | ALPHI= | 447.71 |
| *PARTBN* TIME=100.50 IS=1 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 911.97  | AINCHI=  | 899.78  | DELZ=  | 12.188 | ALP= | 451.62 | ALPHI= | 448.04 |
| *PARTBN* TIME=100.50 IS=2 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 911.21  | AINCHI=  | 899.78  | DELZ=  | 11.427 | ALP= | 451.64 | ALPHI= | 448.28 |
| *PARTBN* TIME=100.50 IS=3 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 911.36  | AINCHI=  | 899.78  | DELZ=  | 11.578 | ALP= | 451.64 | ALPHI= | 448.24 |
| *PARTBN* TIME=100.50 IS=4 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 912.17  | AINCHI=  | 899.78  | DELZ=  | 12.393 | ALP= | 451.62 | ALPHI= | 447.98 |
| *PARTBN* TIME=100.50 IS=5 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.17  | AINCHI=  | 899.78  | DELZ=  | 13.386 | ALP= | 451.59 | ALPHI= | 447.68 |
| *PARTBN* TIME=100.50 IS=6 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.44  | AINCHI=  | 899.78  | DELZ=  | 13.661 | ALP= | 451.58 | ALPHI= | 447.59 |
| *PARTBN* TIME=100.50 IS=7 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.39  | AINCHI=  | 899.78  | DELZ=  | 13.607 | ALP= | 451.58 | ALPHI= | 447.60 |
| *PARTBN* TIME=100.50 IS=8 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 913.06  | AINCHI=  | 899.78  | DELZ=  | 13.279 | ALP= | 451.59 | ALPHI= | 447.71 |
| *PARTBN* TIME=101.00 IS=1 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 908.60  | AINCHI=  | 899.78  | DELZ=  | 8.822  | ALP= | 451.71 | ALPHI= | 449.14 |
| *PARTBN* TIME=101.00 IS=2 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 907.84  | AINCHI=  | 899.78  | DELZ=  | 8.056  | ALP= | 451.73 | ALPHI= | 449.38 |
| *PARTBN* TIME=101.00 IS=3 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 907.99  | AINCHI=  | 899.78  | DELZ=  | 8.207  | ALP= | 451.73 | ALPHI= | 449.35 |
| *PARTBN* TIME=101.00 IS=4 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 908.81  | AINCHI=  | 899.78  | DELZ=  | 9.028  | ALP= | 451.71 | ALPHI= | 449.08 |
| *PARTBN* TIME=101.00 IS=5 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 909.80  | AINCHI=  | 899.78  | DELZ=  | 10.323 | ALP= | 451.68 | ALPHI= | 448.75 |
| *PARTBN* TIME=101.00 IS=6 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 909.08  | AINCHI=  | 899.78  | DELZ=  | 10.300 | ALP= | 451.67 | ALPHI= | 448.67 |
| *PARTBN* TIME=101.00 IS=7 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 910.33  | AINCHI=  | 899.78  | DELZ=  | 10.246 | ALP= | 451.67 | ALPHI= | 448.69 |
| *PARTBN* TIME=101.00 IS=8 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 909.70  | AINCHI=  | 899.78  | DELZ=  | 9.916  | ALP= | 451.68 | ALPHI= | 448.80 |
| *PARTBN* TIME=101.00 IS=1 ZCALC( 69)= | 914.78   | ZCALC( 68)=  | 899.78 | AINCW= | 908.60  | AINCHI=  | 899.78  | DELZ=  | 8.822  | ALP= | 451.71 | ALPHI= | 449.14 |

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|         |             |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|---------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN | TIME=101.00 | IS=2 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 227.84 | AINCHI= | 899.78 | DELZ= | 8.056  | ALP= | 451.73 | ALPHI= | 449.38 |
| *PARTBN | TIME=101.00 | IS=3 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 907.79 | AINCHI= | 899.78 | DELZ= | 8.207  | ALP= | 451.73 | ALPHI= | 449.34 |
| *PARTBN | TIME=101.00 | IS=4 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 908.81 | AINCHI= | 899.78 | DELZ= | 9.028  | ALP= | 451.71 | ALPHI= | 449.08 |
| *PARTBN | TIME=101.00 | IS=5 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 909.80 | AINCHI= | 899.78 | DELZ= | 10.023 | ALP= | 451.68 | ALPHI= | 448.76 |
| *PARTBN | TIME=101.00 | IS=6 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 910.88 | AINCHI= | 899.78 | DELZ= | 10.300 | ALP= | 451.67 | ALPHI= | 448.67 |
| *PARTBN | TIME=101.00 | IS=7 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 910.33 | AINCHI= | 899.78 | DELZ= | 10.246 | ALP= | 451.67 | ALPHI= | 448.69 |
| *PARTBN | TIME=101.00 | IS=8 | ZCALC( 69)= | 914.78 | ZCALC( 68)= | 899.78 | AINCW= | 909.70 | AINCHI= | 899.78 | DELZ= | 9.916  | ALP= | 451.68 | ALPHI= | 448.80 |

IGNITION TIME, TIME (S)

181.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9329065.6     | 2097257.4    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 9348241.1     | 2101568.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 64145.374     | 14420.454    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .11195495*10  | .25169598*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 256.01845     | 256.01845    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .11694442*10  | .26290152*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6272235     | 1.6272235    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3688.9588     | 8132.7621    |
| FLOWRATE INTEGRAL (KG,LBM)                 | S*WDOTN              | 460375.91     | 1014955.1    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 34.426357     | 75.897125    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 475.06109     | 1047.3304    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 237.08779     | 367486.02    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 28.033068     | 1710682.7    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 45197.533     | 99643.505    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1218.2362     | 2685.7512    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1596550     | 1.1596550    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.830364     | 28.286111    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1558.1461     | 5112.0281    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94664073-01  | .94664073-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .3655304*09   | 531.64324    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .48817399*11  | 70803.652    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 3.7286398     | 5779.4032    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .88107527-02  | .34688003    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .97330024     | 38.318957    |
| PROPELLANT VOLUME (M**3,IN**3)             | VPH                  | .52907122     | 32285.957    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.574763     | 3330356.2    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3386.0040     | 6394.8672    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 233.35915     | 361707.41    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 27.502030     | 1678276.9    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 261.44492     | 15954348.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .36670652*09  | 523.16058    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .46473923*11  | 67404.728    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .88118123-02  | .34692175    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .88541052-02  | .34661832    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 21.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3384.5435     | 6092.1782    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| INNOAT AREA (M**2,IN**2)                   | AT                   | 1.5926806     | 2468.6599    |
| EXPANSION RATIO                            | EPR                  | 6.7486944     | 6.7486944    |
| PRESSURE RATIO                             | PEPO                 | .23365433-01  | .23365433-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ADIBOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 2.9310700     | 2.9300000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP      | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | R8TO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|---------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES  | SO. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FUNE                        | 531.64 | 531.64 | 6094.81 | 5.86   | .002 | 421.15  | 14109.53 | 131.80  | 127.12 | -4.68  | .3467  | 38.319 | .0000  | .000  |
| 15.000                      | 531.64 | 531.63 | 6094.80 | 12.01  | .003 | 421.41  | 14127.81 | 270.82  | 139.00 | -0.02  | .3467  | 38.276 | .0000  | .000  |
| 30.000                      | 531.64 | 531.63 | 6094.80 | 18.16  | .005 | 421.67  | 14146.05 | 409.93  | 139.08 | -0.02  | .3467  | 38.271 | .0000  | .000  |
| 45.000                      | 531.63 | 531.62 | 6094.77 | 24.29  | .007 | 421.93  | 14164.23 | 549.12  | 139.17 | -0.02  | .3467  | 38.266 | .0000  | .000  |
| 60.000                      | 531.62 | 531.60 | 6094.77 | 30.41  | .009 | 422.19  | 14182.42 | 688.39  | 139.25 | -0.02  | .3467  | 38.262 | .0000  | .000  |
| 75.000                      | 531.58 | 531.58 | 6094.76 | 36.52  | .010 | 422.45  | 14200.56 | 827.75  | 139.34 | -0.02  | .3467  | 38.257 | .0000  | .000  |
| 90.000                      | 531.61 | 531.56 | 6094.74 | 42.62  | .012 | 422.71  | 14218.65 | 967.19  | 139.42 | -0.02  | .3466  | 38.252 | .0000  | .000  |
| 105.000                     | 531.59 | 531.53 | 6094.72 | 48.71  | .014 | 422.97  | 14236.72 | 1106.72 | 139.50 | -0.02  | .3466  | 38.246 | .0000  | .000  |
| 116.761                     | 531.58 | 531.51 | 6094.70 | 53.48  | .015 | 423.18  | 14250.86 | 1216.18 | 109.44 | -0.02  | .3466  | 38.241 | .0000  | .000  |
| 116.771                     | 531.58 | 531.51 | 6094.69 | 55.56  | .016 | 218.38  | 13717.79 | 1216.18 | .00    | -0.00  | .3466  | 38.242 | .0000  | .000  |
| 131.771                     | 531.57 | 531.48 | 6094.67 | 58.58  | .017 | 331.09  | 13980.56 | 1336.92 | 90.63  | -0.11  | .3466  | 38.242 | .0000  | .000  |
| 143.919                     | 531.55 | 531.46 | 6094.66 | 62.15  | .018 | 422.37  | 14193.68 | 1407.62 | 100.65 | -0.04  | .3466  | 38.235 | .0000  | .000  |
| 158.919                     | 531.53 | 531.42 | 6094.63 | 68.05  | .019 | 423.29  | 14249.05 | 1547.13 | 139.49 | -0.02  | .3466  | 38.229 | .0000  | .000  |
| 173.919                     | 531.51 | 531.38 | 6094.59 | 73.92  | .021 | 424.21  | 14304.15 | 1686.94 | 139.79 | -0.02  | .3466  | 38.223 | .0000  | .000  |
| 188.919                     | 531.49 | 531.33 | 6094.56 | 79.76  | .023 | 425.14  | 14358.99 | 1827.06 | 140.09 | -0.03  | .3466  | 38.217 | .0000  | .000  |
| 203.919                     | 531.47 | 531.28 | 6094.52 | 85.58  | .024 | 426.06  | 14413.57 | 1967.47 | 140.39 | -0.03  | .3466  | 38.210 | .0000  | .000  |
| 218.919                     | 531.44 | 531.23 | 6094.48 | 91.36  | .026 | 427.99  | 14467.89 | 2108.19 | 140.69 | -0.03  | .3466  | 38.204 | .0000  | .000  |
| 233.919                     | 531.41 | 531.18 | 6094.44 | 97.12  | .028 | 429.91  | 14521.94 | 2249.21 | 140.99 | -0.03  | .3466  | 38.198 | .0000  | .000  |
| 248.919                     | 531.38 | 531.12 | 6094.39 | 102.85 | .029 | 429.84  | 14575.73 | 2390.53 | 141.29 | -0.03  | .3466  | 38.191 | .0000  | .000  |
| 263.919                     | 531.35 | 531.06 | 6094.35 | 108.56 | .031 | 429.76  | 14629.26 | 2532.15 | 141.59 | -0.03  | .3465  | 38.184 | .0000  | .000  |
| 278.919                     | 531.31 | 530.99 | 6094.33 | 114.24 | .032 | 430.69  | 14682.53 | 2674.07 | 141.90 | -0.03  | .3465  | 38.178 | .0000  | .000  |
| 293.919                     | 531.28 | 530.92 | 6094.25 | 119.90 | .034 | 431.61  | 14735.53 | 2816.30 | 142.20 | -0.03  | .3465  | 38.171 | .0000  | .000  |
| 308.919                     | 531.24 | 530.85 | 6094.19 | 125.53 | .036 | 432.53  | 14788.27 | 2958.83 | 142.50 | -0.03  | .3465  | 38.164 | .0000  | .000  |
| 323.919                     | 531.20 | 530.77 | 6094.14 | 131.14 | .037 | 433.46  | 14840.75 | 3101.67 | 142.80 | -0.03  | .3465  | 38.157 | .0000  | .000  |
| 338.919                     | 531.16 | 530.69 | 6094.08 | 136.73 | .039 | 434.38  | 14892.97 | 3244.80 | 143.11 | -0.03  | .3465  | 38.142 | .0000  | .000  |
| 353.919                     | 531.11 | 530.61 | 6094.02 | 142.30 | .040 | 435.31  | 14944.93 | 3388.24 | 143.41 | -0.03  | .3465  | 38.135 | .0000  | .000  |
| 368.919                     | 531.07 | 530.53 | 6093.95 | 147.85 | .042 | 436.23  | 14996.82 | 3531.98 | 143.71 | -0.03  | .3465  | 38.128 | .0000  | .000  |
| 383.919                     | 531.02 | 530.44 | 6093.89 | 153.37 | .044 | 437.16  | 15048.05 | 3676.02 | 144.01 | -0.03  | .3465  | 38.120 | .0000  | .000  |
| 398.919                     | 530.97 | 530.35 | 6093.82 | 158.88 | .045 | 438.08  | 15099.22 | 3820.37 | 144.32 | -0.03  | .3465  | 38.112 | .0000  | .000  |
| 413.048                     | 530.96 | 530.32 | 6093.80 | 160.40 | .046 | 438.94  | 15113.26 | 3860.16 | 39.78  | -0.01  | .3465  | 38.112 | .0000  | .000  |
| 418.048                     | 530.91 | 530.23 | 6093.72 | 166.63 | .047 | 436.47  | 15093.93 | 4004.45 | 144.26 | -0.03  | .3466  | 38.110 | .0000  | .000  |
| 427.051                     | 530.89 | 530.17 | 6093.67 | 170.37 | .048 | 435.35  | 15082.50 | 4090.77 | 86.39  | -0.02  | .3466  | 38.104 | .0000  | .000  |
| 427.061                     | 530.89 | 530.15 | 6093.65 | 171.90 | .049 | -234.79 | 14941.50 | 4090.77 | .00    | -0.00  | .3466  | 38.129 | .0000  | .000  |
| 442.061                     | 530.92 | 530.15 | 6093.60 | 175.95 | .050 | 37.41   | 14605.76 | 4091.17 | .00    | -0.40  | .3464  | 38.130 | .0000  | .000  |
| 457.061                     | 530.94 | 530.11 | 6093.50 | 182.82 | .052 | 309.61  | 14255.24 | 4148.56 | 57.19  | -0.21  | .3463  | 38.102 | .0000  | .000  |
| 463.204                     | 530.94 | 530.07 | 6093.44 | 186.94 | .053 | 421.08  | 14107.43 | 4197.90 | 49.32  | -0.03  | .3463  | 38.061 | .0000  | .000  |
| 478.204                     | 530.87 | 529.96 | 6093.36 | 192.62 | .055 | 421.65  | 14147.80 | 4336.81 | 138.88 | -0.02  | .3463  | 38.040 | .0000  | .000  |
| 493.204                     | 530.81 | 529.84 | 6093.27 | 198.27 | .056 | 422.22  | 14187.99 | 4475.90 | 139.06 | -0.02  | .3463  | 38.030 | .0000  | .000  |
| 508.204                     | 530.75 | 529.72 | 6093.18 | 203.91 | .058 | 422.79  | 14227.98 | 4615.16 | 139.24 | -0.03  | .3462  | 38.020 | .0000  | .000  |
| 523.204                     | 530.68 | 529.59 | 6093.09 | 209.53 | .059 | 423.36  | 14267.80 | 4754.60 | 139.41 | -0.03  | .3462  | 38.010 | .0000  | .000  |
| 538.204                     | 530.61 | 529.46 | 6093.00 | 215.14 | .061 | 423.93  | 14307.43 | 4894.21 | 139.59 | -0.03  | .3462  | 38.000 | .0000  | .000  |
| 553.204                     | 530.54 | 529.33 | 6092.90 | 220.72 | .063 | 424.53  | 14346.87 | 5034.01 | 139.77 | -0.03  | .3462  | 37.990 | .0000  | .000  |
| 568.204                     | 530.46 | 529.20 | 6092.80 | 226.30 | .064 | 425.08  | 14386.12 | 5173.98 | 139.94 | -0.03  | .3461  | 37.979 | .0000  | .000  |
| 583.204                     | 530.39 | 529.15 | 6092.70 | 231.05 | .066 | 425.65  | 14425.19 | 5314.12 | 140.12 | -0.03  | .3461  | 37.969 | .0000  | .000  |
| 598.204                     | 530.31 | 528.92 | 6092.60 | 237.39 | .067 | 426.22  | 14464.00 | 5454.44 | 140.29 | -0.03  | .3461  | 37.958 | .0000  | .000  |
| 613.204                     | 530.23 | 528.78 | 6092.53 | 243.92 | .069 | 426.79  | 14502.77 | 5594.94 | 140.47 | -0.03  | .3460  | 37.947 | .0000  | .000  |

|         |        |        |         |        |      |        |          |         |        |       |      |        |       |      |
|---------|--------|--------|---------|--------|------|--------|----------|---------|--------|-------|------|--------|-------|------|
| 625204  | 530.15 | 528.63 | 6092.39 | 248.43 | .070 | 427.36 | 14541.29 | 5735.62 | 140.65 | -.003 | 3460 | 37.937 | .0000 | .000 |
| 643204  | 530.07 | 528.48 | 6092.28 | 253.93 | .072 | 427.93 | 14579.61 | 5876.47 | 140.83 | -.003 | 3460 | 37.926 | .0000 | .000 |
| 658204  | 529.99 | 528.33 | 6092.17 | 259.42 | .074 | 428.55 | 14617.75 | 6017.50 | 141.03 | -.003 | 3460 | 37.915 | .0000 | .000 |
| 673204  | 529.90 | 528.17 | 6092.06 | 264.89 | .075 | 429.07 | 14655.70 | 6158.71 | 141.18 | -.003 | 3459 | 37.904 | .0000 | .000 |
| 688204  | 529.81 | 528.01 | 6091.95 | 270.36 | .077 | 429.64 | 14693.47 | 6300.10 | 141.36 | -.003 | 3459 | 37.893 | .0000 | .000 |
| 703204  | 529.72 | 527.85 | 6091.83 | 275.81 | .078 | 430.21 | 14731.35 | 6441.67 | 141.53 | -.003 | 3459 | 37.882 | .0000 | .000 |
| 718204  | 529.63 | 527.68 | 6091.71 | 281.24 | .080 | 430.78 | 14769.45 | 6583.41 | 141.71 | -.003 | 3459 | 37.871 | .0000 | .000 |
| 733204  | 529.55 | 527.59 | 6091.65 | 286.13 | .081 | 431.09 | 14788.26 | 6685.95 | 75.53  | -.002 | 3458 | 37.859 | .0000 | .000 |
| 748204  | 529.46 | 527.42 | 6091.57 | 287.64 | .082 | 433.06 | 14724.65 | 6601.21 | 142.22 | -.003 | 3459 | 37.853 | .0000 | .000 |
| 763204  | 529.42 | 527.36 | 6091.54 | 288.85 | .082 | 433.74 | 14770.98 | 6850.15 | 48.93  | -.001 | 3459 | 37.847 | .0000 | .000 |
| 778204  | 529.42 | 527.43 | 6091.66 | 283.80 | .081 | 423.19 | 15235.58 | 6850.15 | .00    | -.000 | 3459 | 37.897 | .0000 | .000 |
| 793204  | 529.45 | 527.43 | 6091.60 | 286.13 | .081 | 48.50  | 15111.92 | 6850.51 | .03    | -.036 | 3459 | 37.898 | .0000 | .000 |
| 808204  | 529.46 | 527.38 | 6091.51 | 290.40 | .082 | 220.20 | 14987.84 | 6894.98 | 44.22  | -.024 | 3458 | 37.873 | .0000 | .000 |
| 823204  | 529.43 | 527.26 | 6091.35 | 297.18 | .084 | 391.89 | 14863.33 | 6995.83 | 100.72 | -.112 | 3458 | 37.843 | .0000 | .000 |
| 838204  | 529.42 | 527.22 | 6091.31 | 299.12 | .085 | 431.78 | 14834.34 | 7027.32 | 31.49  | -.001 | 3457 | 37.807 | .0000 | .000 |
| 853204  | 529.31 | 527.04 | 6091.19 | 303.88 | .086 | 432.75 | 14722.54 | 7169.61 | 142.25 | -.004 | 3458 | 37.801 | .0000 | .000 |
| 868204  | 529.20 | 526.85 | 6091.08 | 308.62 | .088 | 433.72 | 14770.15 | 7312.23 | 142.58 | -.004 | 3458 | 37.791 | .0000 | .000 |
| 883204  | 529.09 | 526.67 | 6090.96 | 313.35 | .089 | 434.69 | 15037.19 | 7455.17 | 142.90 | -.004 | 3458 | 37.780 | .0000 | .000 |
| 898204  | 528.97 | 526.48 | 6090.85 | 318.06 | .090 | 435.65 | 15103.43 | 7597.95 | 142.75 | -.004 | 3458 | 37.770 | .0000 | .000 |
| 913204  | 528.85 | 526.29 | 6090.74 | 322.21 | .091 | 440.03 | 15197.21 | 7742.18 | 144.17 | -.005 | 3461 | 37.760 | .0000 | .000 |
| 928204  | 528.72 | 526.10 | 6090.64 | 326.46 | .093 | 444.51 | 15297.20 | 7888.07 | 145.81 | -.009 | 3467 | 37.767 | .0000 | .000 |
| 943204  | 528.59 | 525.92 | 6090.52 | 330.83 | .094 | 448.98 | 15373.38 | 8035.73 | 147.55 | -.12  | 3474 | 37.773 | .0000 | .000 |
| 958204  | 528.51 | 525.78 | 6090.45 | 333.60 | .095 | 451.70 | 15425.19 | 8128.49 | 92.60  | -.16  | 3480 | 37.486 | .0000 | .000 |
| 973204  | 528.48 | 525.78 | 6090.51 | 331.27 | .094 | .00    | 15534.35 | 8128.69 | .00    | -.20  | 3479 | 36.717 | .0000 | .000 |
| 988204  | 528.45 | 525.78 | 6090.55 | 329.69 | .094 | .00    | 15659.13 | 8128.88 | .00    | -.19  | 3479 | 35.948 | .0000 | .000 |
| 1003204 | 528.43 | 525.78 | 6090.59 | 328.21 | .093 | .00    | 15680.11 | 8128.10 | .00    | -.22  | 3479 | 35.178 | .0000 | .000 |
| 1018204 | 528.40 | 525.78 | 6090.63 | 326.82 | .093 | .00    | 15747.29 | 8129.35 | .00    | -.24  | 3479 | 34.409 | .0000 | .000 |
| 1033204 | 528.39 | 525.78 | 6090.66 | 325.52 | .092 | .00    | 15810.67 | 8129.61 | .00    | -.27  | 3479 | 33.640 | .0000 | .000 |
| 1048204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 32.871 | .0000 | .000 |
| 1063204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1078204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1093204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1108204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1123204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1138204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1153204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1168204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1183204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1198204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1213204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1228204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1243204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1258204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1273204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1288204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1303204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1318204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1333204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1348204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1363204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1378204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1393204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1408204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1423204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1438204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1453204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1468204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1483204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1498204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1513204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1528204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1543204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1558204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1573204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1588204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1603204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1618204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1633204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1648204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1663204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1678204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1693204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1708204 | 528.33 | 525.78 | 6090.75 | 322.16 | .091 | .00    | 15978.01 | 8130.55 | .00    | -.33  | 3479 | 31.332 | .0000 | .000 |
| 1723204 | 528.32 | 525.78 | 6090.76 | 321.76 | .091 | .00    | 15997.77 | 8130.69 | .00    | -.14  | 3479 | 31.024 | .0000 | .000 |
| 1738204 | 528.33 | 525.78 | 6090.74 | 322.34 | .091 | .00    | 15969.84 | 8131.04 | .00    | -.35  | 3479 | 30.483 | .0000 | .000 |
| 1753204 | 528.34 | 525.78 | 6090.73 | 322.92 | .092 | .00    | 15941.80 | 8131.39 | .00    | -.35  | 3479 | 29.942 | .0000 | .000 |
| 1768204 | 528.35 | 525.78 | 6090.71 | 323.44 | .092 | .00    | 15916.69 | 8131.70 | .00    | -.31  | 3479 | 29.459 | .0000 | .000 |
| 1783204 | 528.36 | 525.78 | 6090.69 | 324.31 | .092 | .00    | 15870.25 | 8129.90 | .00    | -.29  | 3479 | 29.460 | .0000 | .000 |
| 1798204 | 528.35 | 525.78 | 6090.72 | 323.19 | .092 | .00    | 15926.03 | 8130.22 | .00    | -.31  | 3479 | 32.101 | .0000 | .000 |
| 1813204 | 528.33 | 525.78 | 6090.75 | 322.16 |      |        |          |         |        |       |      |        |       |      |

| SLOT<br>INTERFACE<br>LOCATION<br>IN.    | PO          | PSIA      | P           | T         | U           | FT/SEC    | SQ. IN. | AP     | DW/DOT  | AB     | RB     | DELTA<br>TAU<br>IN. | MSLOT<br>LB/SEC. |              |
|-----------------------------------------|-------------|-----------|-------------|-----------|-------------|-----------|---------|--------|---------|--------|--------|---------------------|------------------|--------------|
| FOREWARD                                | 1.1676*02   | 5.3150*02 | 5.3151*02   | 6.0947*03 | 4.6302*01   | 1.6460*04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000              | 1.2162*03        |              |
| AFT                                     | 1.1677*02   | 5.3150*02 | 5.3151*02   | 6.0947*03 | 4.6302*01   | 1.6460*04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000              | 1.2162*03        |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.4468-04 |             |           |             |           |             |           |         |        |         |        |        |                     |                  |              |
| FOREWARD                                | 4.2705*02   | 5.3089*02 | 5.3017*02   | 6.0937*03 | 1.5685*02   | 1.6383*04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000              | 4.0908*03        |              |
| AFT                                     | 4.2706*02   | 5.3087*02 | 5.3015*02   | 6.0937*03 | 1.5685*02   | 1.6383*04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000              | 4.0908*03        |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.4299-04 |             |           |             |           |             |           |         |        |         |        |        |                     |                  |              |
| FOREWARD                                | 7.4634*02   | 5.2942*02 | 5.2736*02   | 6.0915*03 | 2.6395*02   | 1.6383*04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000              | 6.8502*03        |              |
| AFT                                     | 7.4635*02   | 5.2949*02 | 5.2743*02   | 6.0917*03 | 2.6392*02   | 1.6383*04 | 0.0000  | 0.0000 | 0.0000  | 0.0000 | 0.0000 | 0.0000              | 6.8502*03        |              |
| GAS BUILDUP IN SLOT, DW/DT = -2.4322-04 |             |           |             |           |             |           |         |        |         |        |        |                     |                  |              |
| *PARTB*                                 | TIME=101.50 | IS=1      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 905.24 | AINCHI= | 899.78 | DELZ=  | 5.461               | ALP=451.80       | ALPHI=450.23 |
| *PARTB*                                 | TIME=101.50 | IS=2      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 904.47 | AINCHI= | 899.78 | DELZ=  | 4.689               | ALP=451.82       | ALPHI=450.48 |
| *PARTB*                                 | TIME=101.50 | IS=3      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 904.62 | AINCHI= | 899.78 | DELZ=  | 5.668               | ALP=451.82       | ALPHI=450.43 |
| *PARTB*                                 | TIME=101.50 | IS=4      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 905.45 | AINCHI= | 899.78 | DELZ=  | 6.826               | ALP=451.79       | ALPHI=450.17 |
| *PARTB*                                 | TIME=101.50 | IS=5      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.45 | AINCHI= | 899.78 | DELZ=  | 6.945               | ALP=451.77       | ALPHI=449.85 |
| *PARTB*                                 | TIME=101.50 | IS=6      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.73 | AINCHI= | 899.78 | DELZ=  | 6.945               | ALP=451.76       | ALPHI=449.76 |
| *PARTB*                                 | TIME=101.50 | IS=7      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.67 | AINCHI= | 899.78 | DELZ=  | 6.891               | ALP=451.76       | ALPHI=449.78 |
| *PARTB*                                 | TIME=101.50 | IS=8      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.34 | AINCHI= | 899.78 | DELZ=  | 6.559               | ALP=451.77       | ALPHI=449.88 |
| *PARTB*                                 | TIME=101.50 | IS=1      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 905.24 | AINCHI= | 899.78 | DELZ=  | 5.461               | ALP=451.80       | ALPHI=450.23 |
| *PARTB*                                 | TIME=101.50 | IS=2      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 904.47 | AINCHI= | 899.78 | DELZ=  | 4.689               | ALP=451.82       | ALPHI=450.48 |
| *PARTB*                                 | TIME=101.50 | IS=3      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 904.62 | AINCHI= | 899.78 | DELZ=  | 4.840               | ALP=451.82       | ALPHI=450.43 |
| *PARTB*                                 | TIME=101.50 | IS=4      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 905.45 | AINCHI= | 899.78 | DELZ=  | 5.668               | ALP=451.79       | ALPHI=450.17 |
| *PARTB*                                 | TIME=101.50 | IS=5      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.45 | AINCHI= | 899.78 | DELZ=  | 6.826               | ALP=451.77       | ALPHI=449.85 |
| *PARTB*                                 | TIME=101.50 | IS=6      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.73 | AINCHI= | 899.78 | DELZ=  | 6.945               | ALP=451.76       | ALPHI=449.76 |
| *PARTB*                                 | TIME=101.50 | IS=7      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.67 | AINCHI= | 899.78 | DELZ=  | 6.891               | ALP=451.76       | ALPHI=449.78 |
| *PARTB*                                 | TIME=101.50 | IS=8      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 906.34 | AINCHI= | 899.78 | DELZ=  | 6.559               | ALP=451.77       | ALPHI=449.88 |
| *PARTB*                                 | TIME=102.00 | IS=1      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 901.88 | AINCHI= | 899.78 | DELZ=  | 2.103               | ALP=451.80       | ALPHI=451.32 |
| *PARTB*                                 | TIME=102.00 | IS=2      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 901.11 | AINCHI= | 899.78 | DELZ=  | 1.325               | ALP=451.91       | ALPHI=451.58 |
| *PARTB*                                 | TIME=102.00 | IS=3      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 901.26 | AINCHI= | 899.78 | DELZ=  | 1.476               | ALP=451.91       | ALPHI=451.53 |
| *PARTB*                                 | TIME=102.00 | IS=4      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 902.09 | AINCHI= | 899.78 | DELZ=  | 2.312               | ALP=451.88       | ALPHI=451.26 |
| *PARTB*                                 | TIME=102.00 | IS=5      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 903.10 | AINCHI= | 899.78 | DELZ=  | 3.316               | ALP=451.86       | ALPHI=450.93 |
| *PARTB*                                 | TIME=102.00 | IS=6      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 903.38 | AINCHI= | 899.78 | DELZ=  | 3.596               | ALP=451.85       | ALPHI=450.84 |
| *PARTB*                                 | TIME=102.00 | IS=7      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 903.32 | AINCHI= | 899.78 | DELZ=  | 3.541               | ALP=451.85       | ALPHI=450.86 |
| *PARTB*                                 | TIME=102.00 | IS=8      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 902.99 | AINCHI= | 899.78 | DELZ=  | 3.208               | ALP=451.86       | ALPHI=450.97 |
| *PARTB*                                 | TIME=102.00 | IS=1      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 901.88 | AINCHI= | 899.78 | DELZ=  | 2.103               | ALP=451.80       | ALPHI=451.32 |
| *PARTB*                                 | TIME=102.00 | IS=2      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 901.11 | AINCHI= | 899.78 | DELZ=  | 1.325               | ALP=451.91       | ALPHI=451.58 |
| *PARTB*                                 | TIME=102.00 | IS=3      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 901.26 | AINCHI= | 899.78 | DELZ=  | 1.476               | ALP=451.91       | ALPHI=451.53 |
| *PARTB*                                 | TIME=102.00 | IS=4      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 902.09 | AINCHI= | 899.78 | DELZ=  | 2.312               | ALP=451.88       | ALPHI=451.26 |
| *PARTB*                                 | TIME=102.00 | IS=5      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 903.10 | AINCHI= | 899.78 | DELZ=  | 3.316               | ALP=451.86       | ALPHI=450.93 |
| *PARTB*                                 | TIME=102.00 | IS=6      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 903.38 | AINCHI= | 899.78 | DELZ=  | 3.596               | ALP=451.85       | ALPHI=450.84 |
| *PARTB*                                 | TIME=102.00 | IS=7      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 903.32 | AINCHI= | 899.78 | DELZ=  | 3.541               | ALP=451.85       | ALPHI=450.86 |
| *PARTB*                                 | TIME=102.00 | IS=8      | ZCALC( 69)= | 914.78    | ZCALC( 68)= | 899.78    | AINCW=  | 902.99 | AINCHI= | 899.78 | DELZ=  | 3.208               | ALP=451.86       | ALPHI=450.97 |

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\*PARTBN\* TIME=102.00 IS=U ZCALC( 69)= 914.78 ZCALC( 68)= 899.70 AINCW= 902.99 AINCHI= 899.78 DELZ= 3.208 ALP=151.86 ALPHI=450.97



IGNITION TIME, TIME (S) 102.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9223631.0     | 2073554.7    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 9241379.9     | 2077544.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 64605.444     | 14523.882    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT1               | .11288764*10  | .25378151*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 255.95522     | 255.95522    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVT1               | .11787396*10  | .26499119*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6273679     | 1.6273679    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3647.0586     | 8140.3879    |
| FLUXRATE INTEGRAL (KG,LBM)                 | SHOUTN               | 464144.13     | 1023042.2    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 34.673273     | 76.441483    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 440.44714     | 971.01974    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 234.87630     | 364058.99    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 25.807171     | 1574850.2    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 41535.708     | 91570.562    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1205.4484     | 2657.5587    |
| RATIO OF SPECIFIC HEATS                    | GAHA                 | 1.1576490     | 1.1576490    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.828841     | 28.282754    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1558.0324     | 5111.6550    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94289290-01  | .94289290-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .36214419*09  | 525.24575    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .49181768*11  | 71332.124    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 3.5542917     | 5509.1632    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .87732201-02  | .34540237    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .98210183     | 38.665425    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .49706671     | 30332.872    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.606765     | 3332309.3    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3384.9028     | 6092.8250    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCVL                | 231.32201     | 356549.83    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCVL                | 251.308139    | 1544397.4    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 261.85090     | 15979122.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .35638387*09  | 516.89111    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .46832489*11  | 67924.783    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(N1+1,1)          | .87747182-02  | .34546135    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(N1+2,1)          | .87670352-02  | .34515887    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(N1+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(N1+2,1)         | .52501803     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(N1+2,3)         | 3383.4638     | 6090.2349    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5934101     | 2469.8217    |
| EXPANSION RATIO                            | EPR                  | 6.7455220     | 6.7455200    |
| PRESSURE RATIO                             | PEPO                 | .23380231-01  | .23380231-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY



INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGION | PO     | P      | PSIA    | DEG. R | T    | U      | H        | LP      | AP      | WDOT   | DWDOT  | LB/SEC | DW/DT  | RB     | TAU  | ROTO   | TAUTO. |
|----------------------------|--------|--------|---------|--------|------|--------|----------|---------|---------|--------|--------|--------|--------|--------|------|--------|--------|
|                            | PSIA   |        |         |        |      | FT/SEC |          | INCHES  | SQ. IN. | LB/SEC | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.    |
| FOUR                       | 525.25 | 525.24 | 6092.02 | 5.59   | .002 | 423.32 | 14255.75 | 125.84  | 120.66  | -5.18  | .3452  | 38.665 | .0000  | .000   | .000 | .000   | .000   |
| 15.000                     | 525.24 | 525.24 | 6092.02 | 11.77  | .003 | 423.58 | 14274.12 | 265.02  | 139.12  | -0.06  | .3452  | 38.622 | .0000  | .000   | .000 | .000   | .000   |
| 30.000                     | 525.24 | 525.23 | 6092.81 | 17.93  | .005 | 423.84 | 14292.45 | 434.28  | 139.20  | -0.06  | .3452  | 38.617 | .0000  | .000   | .000 | .000   | .000   |
| 45.000                     | 525.24 | 525.22 | 6092.80 | 24.09  | .007 | 424.10 | 14310.74 | 543.63  | 139.29  | -0.06  | .3452  | 38.613 | .0000  | .000   | .000 | .000   | .000   |
| 60.000                     | 525.23 | 525.21 | 6092.79 | 30.23  | .009 | 424.36 | 14329.00 | 603.06  | 139.37  | -0.06  | .3452  | 38.608 | .0000  | .000   | .000 | .000   | .000   |
| 75.000                     | 525.22 | 525.19 | 6092.77 | 36.35  | .010 | 424.62 | 14347.22 | 822.58  | 139.46  | -0.06  | .3452  | 38.603 | .0000  | .000   | .000 | .000   | .000   |
| 90.000                     | 525.21 | 525.17 | 6092.76 | 42.47  | .012 | 424.88 | 14365.41 | 962.18  | 139.54  | -0.06  | .3452  | 38.598 | .0000  | .000   | .000 | .000   | .000   |
| 105.000                    | 525.20 | 525.14 | 6092.73 | 48.58  | .014 | 425.15 | 14383.56 | 1101.87 | 139.62  | -0.06  | .3452  | 38.593 | .0000  | .000   | .000 | .000   | .000   |
| 116.761                    | 525.19 | 525.12 | 6092.71 | 53.36  | .015 | 425.35 | 14397.77 | 1211.45 | 139.53  | -0.05  | .3452  | 38.587 | .0000  | .000   | .000 | .000   | .000   |
| 116.771                    | 525.19 | 525.11 | 6092.70 | 55.74  | .016 | 425.09 | 13781.93 | 1211.45 | .00     | -0.00  | .3452  | 38.588 | .0000  | .000   | .000 | .000   | .000   |
| 131.771                    | 525.18 | 525.09 | 6092.70 | 57.90  | .016 | 425.62 | 14090.24 | 1286.31 | 74.68   | -0.18  | .3452  | 38.588 | .0000  | .000   | .000 | .000   | .000   |
| 143.919                    | 525.16 | 525.07 | 6092.68 | 61.17  | .017 | 424.53 | 14346.31 | 1383.12 | 96.73   | -0.08  | .3452  | 38.581 | .0000  | .000   | .000 | .000   | .000   |
| 156.919                    | 525.14 | 525.03 | 6092.65 | 67.09  | .019 | 425.45 | 14396.02 | 1522.79 | 139.61  | -0.06  | .3451  | 38.575 | .0000  | .000   | .000 | .000   | .000   |
| 173.919                    | 525.12 | 524.99 | 6092.62 | 72.98  | .021 | 426.38 | 14451.46 | 1662.76 | 139.91  | -0.06  | .3451  | 38.569 | .0000  | .000   | .000 | .000   | .000   |
| 188.919                    | 525.10 | 524.95 | 6092.58 | 78.84  | .022 | 427.31 | 14506.64 | 1803.03 | 140.21  | -0.06  | .3451  | 38.563 | .0000  | .000   | .000 | .000   | .000   |
| 203.919                    | 525.08 | 524.90 | 6092.55 | 84.68  | .024 | 428.23 | 14561.56 | 1943.60 | 140.51  | -0.06  | .3451  | 38.557 | .0000  | .000   | .000 | .000   | .000   |
| 218.919                    | 525.05 | 524.85 | 6092.51 | 90.48  | .026 | 429.16 | 14616.21 | 2084.48 | 140.81  | -0.06  | .3451  | 38.550 | .0000  | .000   | .000 | .000   | .000   |
| 233.919                    | 525.02 | 524.80 | 6092.46 | 96.26  | .027 | 430.08 | 14670.59 | 2225.66 | 141.12  | -0.06  | .3451  | 38.544 | .0000  | .000   | .000 | .000   | .000   |
| 248.919                    | 524.99 | 524.74 | 6092.42 | 102.02 | .029 | 431.01 | 14724.71 | 2367.15 | 141.42  | -0.07  | .3451  | 38.537 | .0000  | .000   | .000 | .000   | .000   |
| 263.919                    | 524.96 | 524.68 | 6092.37 | 107.75 | .031 | 431.93 | 14778.56 | 2508.93 | 141.72  | -0.07  | .3451  | 38.531 | .0000  | .000   | .000 | .000   | .000   |
| 278.919                    | 524.93 | 524.61 | 6092.32 | 113.45 | .032 | 432.86 | 14832.14 | 2651.02 | 142.02  | -0.07  | .3451  | 38.524 | .0000  | .000   | .000 | .000   | .000   |
| 293.919                    | 524.89 | 524.54 | 6092.27 | 119.13 | .034 | 433.78 | 14885.46 | 2793.42 | 142.32  | -0.07  | .3451  | 38.517 | .0000  | .000   | .000 | .000   | .000   |
| 308.919                    | 524.85 | 524.47 | 6092.22 | 124.79 | .035 | 434.71 | 14938.51 | 2936.11 | 142.63  | -0.07  | .3451  | 38.510 | .0000  | .000   | .000 | .000   | .000   |
| 323.919                    | 524.82 | 524.40 | 6092.16 | 130.42 | .037 | 435.63 | 14991.30 | 3079.10 | 142.93  | -0.07  | .3451  | 38.503 | .0000  | .000   | .000 | .000   | .000   |
| 338.919                    | 524.77 | 524.32 | 6092.10 | 136.03 | .039 | 436.56 | 15043.82 | 3222.40 | 143.23  | -0.07  | .3451  | 38.496 | .0000  | .000   | .000 | .000   | .000   |
| 353.919                    | 524.73 | 524.24 | 6092.04 | 141.62 | .040 | 437.48 | 15096.08 | 3365.01 | 143.54  | -0.07  | .3451  | 38.489 | .0000  | .000   | .000 | .000   | .000   |
| 368.919                    | 524.69 | 524.16 | 6091.98 | 147.19 | .042 | 438.41 | 15148.26 | 3507.93 | 143.85  | -0.07  | .3451  | 38.481 | .0000  | .000   | .000 | .000   | .000   |
| 383.919                    | 524.64 | 524.07 | 6091.91 | 152.74 | .043 | 439.33 | 15199.79 | 3654.16 | 144.16  | -0.07  | .3451  | 38.474 | .0000  | .000   | .000 | .000   | .000   |
| 398.919                    | 524.59 | 523.98 | 6091.85 | 158.28 | .045 | 440.26 | 15251.25 | 3798.70 | 144.46  | -0.07  | .3451  | 38.466 | .0000  | .000   | .000 | .000   | .000   |
| 403.048                    | 524.58 | 523.95 | 6091.83 | 159.80 | .045 | 440.51 | 15265.36 | 3838.54 | 39.82   | -0.02  | .3451  | 38.458 | .0000  | .000   | .000 | .000   | .000   |
| 418.048                    | 524.52 | 523.88 | 6091.75 | 166.05 | .047 | 438.65 | 15245.42 | 3983.01 | 144.41  | -0.07  | .3452  | 38.456 | .0000  | .000   | .000 | .000   | .000   |
| 427.051                    | 524.51 | 523.80 | 6091.70 | 169.81 | .048 | 437.53 | 15233.62 | 4069.45 | 86.39   | -0.04  | .3452  | 38.450 | .0000  | .000   | .000 | .000   | .000   |
| 427.061                    | 524.51 | 523.76 | 6091.64 | 174.12 | .049 | 425.58 | 14857.48 | 4069.45 | .00     | -0.00  | .3452  | 38.475 | .0000  | .000   | .000 | .000   | .000   |
| 442.061                    | 524.53 | 523.76 | 6091.60 | 177.03 | .050 | 29.07  | 14614.15 | 4069.89 | .00     | -0.44  | .3449  | 38.476 | .0000  | .000   | .000 | .000   | .000   |
| 457.061                    | 524.54 | 523.72 | 6091.52 | 182.64 | .052 | 308.72 | 14360.40 | 4125.56 | 55.43   | -0.24  | .3448  | 38.448 | .0000  | .000   | .000 | .000   | .000   |
| 473.204                    | 524.53 | 523.68 | 6091.47 | 188.22 | .053 | 423.24 | 14253.47 | 4174.80 | 49.19   | -0.04  | .3448  | 38.407 | .0000  | .000   | .000 | .000   | .000   |
| 478.204                    | 524.47 | 523.57 | 6091.38 | 191.91 | .054 | 423.01 | 14294.46 | 4313.86 | 139.00  | -0.06  | .3448  | 38.386 | .0000  | .000   | .000 | .000   | .000   |
| 493.204                    | 524.41 | 523.45 | 6091.30 | 197.59 | .056 | 424.39 | 14334.45 | 4453.10 | 139.18  | -0.06  | .3448  | 38.376 | .0000  | .000   | .000 | .000   | .000   |
| 508.204                    | 524.34 | 523.33 | 6091.21 | 203.25 | .058 | 424.96 | 14374.65 | 4592.52 | 139.36  | -0.06  | .3448  | 38.366 | .0000  | .000   | .000 | .000   | .000   |
| 523.204                    | 524.28 | 523.21 | 6091.12 | 208.89 | .059 | 425.53 | 14414.67 | 4732.11 | 139.53  | -0.06  | .3447  | 38.356 | .0000  | .000   | .000 | .000   | .000   |
| 538.204                    | 524.21 | 523.08 | 6091.02 | 214.52 | .061 | 426.10 | 14454.44 | 4871.88 | 139.71  | -0.06  | .3447  | 38.346 | .0000  | .000   | .000 | .000   | .000   |
| 553.204                    | 524.14 | 522.95 | 6090.93 | 220.13 | .062 | 426.67 | 14494.13 | 5011.83 | 139.89  | -0.06  | .3447  | 38.335 | .0000  | .000   | .000 | .000   | .000   |
| 568.204                    | 524.07 | 522.82 | 6090.83 | 225.72 | .064 | 427.24 | 14533.56 | 5151.96 | 140.06  | -0.06  | .3447  | 38.325 | .0000  | .000   | .000 | .000   | .000   |
| 583.204                    | 523.99 | 522.69 | 6090.73 | 231.30 | .066 | 427.81 | 14572.84 | 5292.27 | 140.24  | -0.07  | .3447  | 38.314 | .0000  | .000   | .000 | .000   | .000   |
| 598.204                    | 523.92 | 522.55 | 6090.63 | 236.86 | .067 | 428.38 | 14611.91 | 5432.75 | 140.42  | -0.07  | .3446  | 38.304 | .0000  | .000   | .000 | .000   | .000   |
| 613.204                    | 523.84 | 522.40 | 6090.53 | 242.41 | .069 | 428.95 | 14651.79 | 5573.42 | 140.60  | -0.07  | .3446  | 38.293 | .0000  | .000   | .000 | .000   | .000   |

|          |        |        |         |        |      |        |          |         |        |      |       |        |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|------|-------|--------|-------|
| 628.204  | 523.76 | 522.26 | 6090.42 | 247.95 | .070 | 429.53 | 14689.48 | 5714.26 | 140.78 | -.07 | 33446 | 38.282 | .000  |
| 63.204   | 523.68 | 522.11 | 6090.31 | 253.97 | .072 | 433.10 | 14727.98 | 5855.28 | 140.95 | -.07 | 33446 | 38.271 | .000  |
| 656.204  | 523.59 | 521.96 | 6090.20 | 258.98 | .073 | 436.67 | 14766.30 | 5976.48 | 141.13 | -.07 | 33446 | 38.260 | .000  |
| 673.204  | 523.51 | 521.83 | 6090.09 | 264.48 | .075 | 431.24 | 14804.42 | 6137.85 | 141.31 | -.07 | 33445 | 36.249 | .000  |
| 688.204  | 523.42 | 521.64 | 6089.97 | 269.96 | .077 | 431.81 | 14842.36 | 6279.40 | 141.48 | -.07 | 33445 | 38.238 | .000  |
| 703.204  | 523.33 | 521.48 | 6089.86 | 275.44 | .078 | 432.38 | 14880.11 | 6421.14 | 141.66 | -.07 | 33445 | 38.227 | .000  |
| 718.204  | 523.24 | 521.32 | 6089.74 | 280.90 | .080 | 432.95 | 14917.67 | 6563.06 | 141.85 | -.07 | 33445 | 38.216 | .000  |
| 726.191  | 523.19 | 521.23 | 6089.67 | 283.80 | .081 | 433.26 | 14937.59 | 6638.70 | 75.60  | -.04 | 33444 | 38.205 | .000  |
| 741.191  | 523.07 | 521.06 | 6089.59 | 287.35 | .082 | 435.23 | 15074.66 | 6781.14 | 142.37 | -.07 | 33445 | 38.199 | .000  |
| 746.336  | 523.03 | 521.00 | 6089.57 | 288.56 | .082 | 435.91 | 15121.23 | 6830.15 | 48.99  | -.03 | 33445 | 38.193 | .000  |
| 746.346  | 523.03 | 521.02 | 6089.60 | 287.29 | .082 | 435.44 | 15187.76 | 6830.15 | .00    | -.00 | 33445 | 38.243 | .000  |
| 761.346  | 523.05 | 521.02 | 6089.57 | 288.50 | .082 | 26.90  | 15124.90 | 6830.56 | .00    | -.41 | 33445 | 38.243 | .000  |
| 776.346  | 523.04 | 523.97 | 6089.50 | 291.38 | .083 | 209.24 | 15061.84 | 6869.55 | 38.71  | -.29 | 33445 | 38.218 | .000  |
| 791.346  | 523.03 | 523.85 | 6089.38 | 296.88 | .084 | 391.59 | 14998.58 | 6968.20 | 98.48  | -.16 | 33444 | 38.188 | .000  |
| 794.831  | 522.99 | 523.82 | 6089.34 | 298.53 | .085 | 433.95 | 14983.86 | 6999.65 | 31.43  | -.02 | 33444 | 38.152 | .000  |
| 805.831  | 522.88 | 523.64 | 6089.22 | 303.32 | .086 | 434.92 | 15052.41 | 7142.12 | 142.40 | -.07 | 33444 | 38.146 | .000  |
| 824.831  | 522.77 | 523.46 | 6089.11 | 308.09 | .087 | 435.89 | 15120.37 | 7284.92 | 142.72 | -.08 | 33444 | 38.136 | .000  |
| 835.831  | 522.66 | 523.28 | 6088.99 | 312.86 | .089 | 436.86 | 15187.74 | 7428.05 | 143.05 | -.08 | 33444 | 38.126 | .000  |
| 854.781  | 522.55 | 523.09 | 6088.88 | 317.59 | .090 | 437.82 | 15254.31 | 7571.02 | 142.89 | -.08 | 33445 | 38.115 | .000  |
| 869.781  | 522.43 | 519.90 | 6088.77 | 322.39 | .091 | 442.20 | 15333.30 | 7715.45 | 144.34 | -.09 | 33449 | 38.106 | .000  |
| 884.781  | 522.31 | 519.71 | 6088.65 | 326.70 | .093 | 446.68 | 15408.95 | 7861.59 | 146.01 | -.12 | 33455 | 38.113 | .000  |
| 899.781  | 522.19 | 519.51 | 6088.53 | 331.41 | .094 | 451.16 | 15481.25 | 8009.55 | 147.81 | -.15 | 33464 | 38.121 | .000  |
| 914.781  | 522.16 | 519.48 | 6088.51 | 332.25 | .094 | 451.88 | 15493.64 | 8035.62 | 25.85  | -.22 | 33465 | 37.486 | .000  |
| 929.781  | 522.12 | 519.48 | 6088.57 | 329.66 | .094 | .00    | 15615.85 | 8035.85 | .00    | -.23 | 33465 | 36.717 | .000  |
| 944.781  | 522.10 | 519.48 | 6088.61 | 328.36 | .093 | .00    | 15678.14 | 8036.38 | .00    | -.23 | 33465 | 35.948 | .000  |
| 959.781  | 522.08 | 519.48 | 6088.64 | 327.14 | .093 | .00    | 15737.10 | 8036.33 | .00    | -.26 | 33465 | 35.178 | .000  |
| 974.781  | 522.06 | 519.48 | 6088.67 | 326.00 | .093 | .00    | 15792.71 | 8036.61 | .00    | -.28 | 33465 | 34.409 | .000  |
| 989.781  | 522.05 | 519.48 | 6088.69 | 324.94 | .092 | .00    | 15844.90 | 8036.92 | .00    | -.30 | 33465 | 33.640 | .000  |
| 1004.781 | 522.03 | 519.48 | 6088.72 | 323.93 | .092 | .00    | 15893.92 | 8037.24 | .00    | -.33 | 33465 | 32.871 | .000  |
| 1019.781 | 522.02 | 519.48 | 6088.74 | 323.04 | .092 | .00    | 15939.52 | 8037.59 | .00    | -.35 | 33465 | 32.101 | .000  |
| 1034.781 | 522.00 | 519.48 | 6088.76 | 322.20 | .091 | .00    | 15981.77 | 8037.96 | .00    | -.37 | 33465 | 31.332 | .000  |
| 1049.791 | 522.00 | 519.48 | 6088.77 | 321.89 | .091 | .00    | 15997.77 | 8038.11 | .00    | -.15 | 33465 | 31.024 | .000  |
| 1055.791 | 522.01 | 519.48 | 6088.76 | 322.47 | .092 | .00    | 15969.84 | 8038.50 | .00    | -.39 | 33465 | 30.483 | .000  |
| 1070.791 | 522.02 | 519.48 | 6088.74 | 323.05 | .092 | .00    | 15941.80 | 8038.88 | .00    | -.38 | 33465 | 29.942 | .000  |
| 1084.791 | 522.02 | 519.48 | 6088.73 | 323.57 | .092 | .00    | 15916.89 | 8039.22 | .00    | -.34 | 33465 | 29.459 | .000  |
| AFT(A)   | 516.89 | 493.42 | 6052.20 | 996.18 | .284 | .....  | 15823.73 | 8040.39 | .00    | -.71 | 33455 | 29.460 | ..... |
| AFT(B)   | 516.89 | 516.89 | 6090.23 | -.03   | .000 | .....  | 15413.12 | .46     | .00    | -.46 | 33452 | 20.670 | ..... |



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|          |             |      |                    |                    |               |                |             |            |              |
|----------|-------------|------|--------------------|--------------------|---------------|----------------|-------------|------------|--------------|
| *PARTBN* | TIME=103.00 | IS=8 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 896.32 | AINCHI= 884.78 | DELZ=11.538 | ALP=452.04 | ALPHI=448.66 |
| *PARTBN* | TIME=103.00 | IS=1 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 895.21 | AINCHI= 884.78 | DELZ=10.431 | ALP=452.07 | ALPHI=449.01 |
| *PARTBN* | TIME=103.00 | IS=2 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 894.43 | AINCHI= 884.78 | DELZ= 9.649 | ALP=452.09 | ALPHI=449.25 |
| *PARTBN* | TIME=103.00 | IS=3 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 894.58 | AINCHI= 884.78 | DELZ= 9.801 | ALP=452.08 | ALPHI=449.21 |
| *PARTBN* | TIME=103.00 | IS=4 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 895.42 | AINCHI= 884.78 | DELZ=10.641 | ALP=452.06 | ALPHI=448.95 |
| *PARTBN* | TIME=103.00 | IS=5 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 896.43 | AINCHI= 884.78 | DELZ=11.646 | ALP=452.03 | ALPHI=448.63 |
| *PARTBN* | TIME=103.00 | IS=6 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 896.71 | AINCHI= 884.78 | DELZ=11.926 | ALP=452.03 | ALPHI=448.54 |
| *PARTBN* | TIME=103.00 | IS=7 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 896.65 | AINCHI= 884.78 | DELZ=11.871 | ALP=452.03 | ALPHI=448.56 |
| *PARTBN* | TIME=103.00 | IS=8 | ZCALC( 68)= 899.78 | ZCALC( 67)= 884.78 | AINCW= 896.32 | AINCHI= 884.78 | DELZ=11.538 | ALP=452.04 | ALPHI=448.66 |

IGNITION TIME, TIME (S)

103.00000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>Motor Parameters:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 9114074.6     | 2048925.5    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 9130396.9     | 2052594.9    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 65015.438     | 14616.052    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRNDT                | .11380452+10  | .25584274+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S)                               | TISP                 | 255.90170     | 255.90170    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVT                | .11079254+10  | .26705626+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6275143     | 1.6275143    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 3603.3640     | 7944.1017    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 467669.35     | 1031034.4    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 34.893314     | 76.926590    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 405.60802     | 894.21262    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 232.61007     | 360546.34    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 23.757304     | 1449759.7    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 37917.841     | 83594.531    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1205.7314     | 2658.1827    |
| RATIO OF SPECIFIC HEATS                                         | GAHA                 | 1.1596427     | 1.1596427    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.827267     | 28.279284    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1557.9147     | 5111.2688    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .93845616-01  | .93845616-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .35758675+09  | 518.63573    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .49541631+11  | 71854.062    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 3.3806960     | 5240.0894    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .87341253-02  | .34386320    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | .99086524     | 39.010443    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | .46672214     | 28481.132    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.637110     | 3334161.0    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3383.7644     | 6090.7759    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 229.22938     | 355306.25    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .30000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 231288616     | 1421158.6    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 266.08579     | 16237551.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .35190843+09  | 510.40003    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPOND                | .47186633+11  | 68438.426    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | .87360019-02  | .34393708    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | .87283452-02  | .34363564    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | .52501900     | 20.670900    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3382.3460     | 6088.2227    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5941720     | 2470.9715    |
| EXPANSION RATIO                                                 | EPR                  | 6.7423812     | 6.7423812    |
| PRESSURE RATIO                                                  | PEPO                 | .23394895-01  | .23394895-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB     | TAU    | RBTO   | TAUTO. |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    |
| FORE                        | 518.64 | 518.63 | 6090.78 | 5.32   | .002 | 425.47 | 14402.09 | 119.53  | 114.26 | -5.27  | .3437  | 39.010 | .0000  | .000   |
| 15.000                      | 518.63 | 518.63 | 6090.77 | 11.52  | .003 | 425.73 | 14420.54 | 258.81  | 139.20 | -.07   | .3437  | 39.967 | .0000  | .000   |
| 30.000                      | 518.63 | 518.62 | 6090.76 | 17.70  | .005 | 426.00 | 14430.96 | 398.17  | 139.29 | -.07   | .3437  | 38.962 | .0000  | .000   |
| 45.000                      | 518.63 | 518.61 | 6090.75 | 23.87  | .007 | 426.26 | 14457.35 | 537.62  | 139.38 | -.07   | .3437  | 38.958 | .0000  | .000   |
| 60.000                      | 518.62 | 518.60 | 6090.74 | 30.03  | .009 | 426.52 | 14475.69 | 677.15  | 139.46 | -.07   | .3437  | 38.953 | .0000  | .000   |
| 75.000                      | 518.61 | 518.58 | 6090.73 | 36.18  | .010 | 426.79 | 14494.01 | 816.77  | 139.55 | -.07   | .3436  | 38.948 | .0000  | .000   |
| 90.000                      | 518.60 | 518.56 | 6090.71 | 42.32  | .012 | 427.05 | 14512.28 | 956.47  | 139.63 | -.07   | .3436  | 38.943 | .0000  | .000   |
| 105.000                     | 518.59 | 518.53 | 6090.69 | 48.44  | .014 | 427.31 | 14530.52 | 1096.27 | 139.72 | -.07   | .3436  | 38.938 | .0000  | .000   |
| 114.761                     | 518.58 | 518.51 | 6090.67 | 53.24  | .015 | 427.52 | 14544.79 | 1205.93 | 109.61 | -.06   | .3436  | 38.932 | .0000  | .000   |
| 116.771                     | 518.58 | 518.50 | 6090.65 | 56.02  | .016 | 86.09  | 13822.99 | 1205.93 | .00    | -.00   | .3436  | 38.933 | .0000  | .000   |
| 131.771                     | 518.57 | 518.49 | 6090.65 | 57.25  | .016 | 274.28 | 14189.65 | 1265.38 | 58.93  | -.22   | .3436  | 38.933 | .0000  | .000   |
| 143.919                     | 518.55 | 518.47 | 6090.64 | 60.20  | .017 | 426.68 | 14487.04 | 1358.00 | 92.83  | -.10   | .3436  | 38.926 | .0000  | .000   |
| 158.919                     | 518.54 | 518.43 | 6090.61 | 66.14  | .019 | 427.61 | 14543.10 | 1497.77 | 139.70 | -.07   | .3436  | 38.920 | .0000  | .000   |
| 173.919                     | 518.52 | 518.39 | 6090.57 | 72.05  | .020 | 428.54 | 14598.89 | 1637.85 | 140.00 | -.07   | .3436  | 38.914 | .0000  | .000   |
| 188.919                     | 518.49 | 518.35 | 6090.54 | 77.94  | .022 | 429.46 | 14654.41 | 1778.23 | 140.30 | -.07   | .3436  | 38.908 | .0000  | .000   |
| 203.919                     | 518.47 | 518.30 | 6090.50 | 83.80  | .024 | 430.39 | 14709.67 | 1918.91 | 140.61 | -.08   | .3436  | 38.901 | .0000  | .000   |
| 218.919                     | 518.45 | 518.25 | 6090.46 | 89.63  | .025 | 431.31 | 14764.65 | 2059.90 | 140.91 | -.08   | .3436  | 38.895 | .0000  | .000   |
| 233.919                     | 518.42 | 518.20 | 6090.42 | 95.43  | .027 | 432.24 | 14819.36 | 2201.19 | 141.21 | -.08   | .3436  | 38.889 | .0000  | .000   |
| 248.919                     | 518.39 | 518.14 | 6090.38 | 101.21 | .029 | 433.17 | 14873.80 | 2342.70 | 141.51 | -.08   | .3436  | 38.882 | .0000  | .000   |
| 263.919                     | 518.36 | 518.08 | 6090.33 | 106.96 | .030 | 434.09 | 14927.98 | 2484.67 | 141.81 | -.08   | .3436  | 38.875 | .0000  | .000   |
| 278.919                     | 518.32 | 518.02 | 6090.28 | 112.69 | .032 | 435.02 | 14981.88 | 2626.88 | 142.12 | -.08   | .3436  | 38.869 | .0000  | .000   |
| 293.919                     | 518.29 | 517.95 | 6090.23 | 118.39 | .034 | 435.94 | 15035.52 | 2769.36 | 142.42 | -.08   | .3436  | 38.862 | .0000  | .000   |
| 308.919                     | 518.25 | 517.88 | 6090.17 | 124.07 | .035 | 436.87 | 15088.88 | 2912.17 | 142.73 | -.08   | .3436  | 38.855 | .0000  | .000   |
| 323.919                     | 518.21 | 517.81 | 6090.12 | 129.73 | .037 | 437.79 | 15141.98 | 3055.29 | 143.04 | -.08   | .3437  | 38.848 | .0000  | .000   |
| 338.919                     | 518.17 | 517.73 | 6090.06 | 135.36 | .038 | 438.72 | 15194.80 | 3198.72 | 143.35 | -.08   | .3437  | 38.841 | .0000  | .000   |
| 353.919                     | 518.13 | 517.65 | 6090.00 | 140.98 | .040 | 439.65 | 15247.36 | 3342.46 | 143.66 | -.08   | .3437  | 38.833 | .0000  | .000   |
| 368.919                     | 518.09 | 517.57 | 6089.94 | 146.57 | .042 | 440.57 | 15299.65 | 3486.81 | 143.96 | -.08   | .3437  | 38.826 | .0000  | .000   |
| 383.919                     | 518.04 | 517.48 | 6089.87 | 152.15 | .043 | 441.50 | 15351.67 | 3630.86 | 144.27 | -.08   | .3437  | 38.818 | .0000  | .000   |
| 398.919                     | 517.99 | 517.39 | 6089.80 | 157.71 | .045 | 442.42 | 15403.41 | 3775.53 | 144.58 | -.08   | .3437  | 38.811 | .0000  | .000   |
| 403.048                     | 517.98 | 517.37 | 6089.78 | 159.23 | .045 | 442.68 | 15417.61 | 3815.40 | 39.85  | -.02   | .3437  | 38.803 | .0000  | .000   |
| 418.048                     | 517.94 | 517.28 | 6089.70 | 165.51 | .047 | 443.61 | 15397.06 | 3960.01 | 144.53 | -.09   | .3438  | 38.801 | .0000  | .000   |
| 427.051                     | 517.91 | 517.22 | 6089.66 | 169.28 | .048 | 439.69 | 15384.89 | 4046.54 | 86.48  | -.05   | .3439  | 38.795 | .0000  | .000   |
| 427.061                     | 517.91 | 517.16 | 6089.56 | 176.37 | .050 | 266.30 | 14768.34 | 4046.54 | .00    | -.00   | .3439  | 38.820 | .0000  | .000   |
| 442.061                     | 517.92 | 517.16 | 6089.53 | 178.18 | .051 | 20.76  | 14619.53 | 4046.99 | .00    | -.45   | .3435  | 38.820 | .0000  | .000   |
| 457.061                     | 517.92 | 517.12 | 6089.47 | 182.50 | .052 | 307.83 | 14464.74 | 4100.93 | 53.69  | -.25   | .3433  | 38.792 | .0000  | .000   |
| 463.204                     | 517.91 | 517.08 | 6089.43 | 185.53 | .053 | 425.40 | 14399.63 | 4150.04 | 49.06  | -.05   | .3433  | 38.751 | .0000  | .000   |
| 478.204                     | 517.85 | 516.97 | 6089.35 | 191.25 | .054 | 425.97 | 14440.43 | 4289.19 | 139.08 | -.07   | .3433  | 38.731 | .0000  | .000   |
| 493.204                     | 517.79 | 516.85 | 6089.26 | 196.95 | .056 | 426.54 | 14481.03 | 4428.53 | 139.27 | -.07   | .3433  | 38.721 | .0000  | .000   |
| 508.204                     | 517.72 | 516.73 | 6089.17 | 202.64 | .058 | 427.11 | 14521.44 | 4568.05 | 139.44 | -.07   | .3433  | 38.711 | .0000  | .000   |
| 523.204                     | 517.66 | 516.61 | 6089.08 | 208.30 | .059 | 427.68 | 14561.65 | 4707.75 | 139.62 | -.07   | .3432  | 38.700 | .0000  | .000   |
| 538.204                     | 517.59 | 516.49 | 6088.99 | 213.95 | .061 | 428.25 | 14601.68 | 4847.63 | 139.80 | -.08   | .3432  | 38.690 | .0000  | .000   |
| 553.204                     | 517.52 | 516.36 | 6088.89 | 219.59 | .062 | 428.83 | 14641.51 | 4987.69 | 139.98 | -.08   | .3432  | 38.680 | .0000  | .000   |
| 568.204                     | 517.45 | 516.23 | 6088.79 | 225.20 | .064 | 429.40 | 14681.10 | 5127.92 | 140.16 | -.08   | .3432  | 38.669 | .0000  | .000   |
| 583.204                     | 517.38 | 516.09 | 6088.69 | 230.81 | .065 | 429.97 | 14720.61 | 5268.34 | 140.34 | -.08   | .3432  | 38.659 | .0000  | .000   |
| 598.204                     | 517.30 | 515.95 | 6088.59 | 236.39 | .067 | 430.54 | 14759.86 | 5408.93 | 140.51 | -.08   | .3431  | 38.648 | .0000  | .000   |
| 613.204                     | 517.23 | 515.81 | 6088.49 | 241.97 | .069 | 431.11 | 14799.93 | 5549.70 | 140.69 | -.08   | .3431  | 38.637 | .0000  | .000   |

|          |        |         |         |        |      |        |          |         |        |     |      |        |       |
|----------|--------|---------|---------|--------|------|--------|----------|---------|--------|-----|------|--------|-------|
| 626.204  | 517.15 | 515.67  | 6088.38 | 247.53 | .070 | 431.69 | 14837.81 | 5690.65 | 140.87 | .08 | 3431 | 38.626 | .0000 |
| 643.204  | 517.07 | 515.52  | 6088.27 | 253.07 | .072 | 432.26 | 14876.49 | 5831.77 | 141.05 | .08 | 3431 | 38.615 | .0000 |
| 650.204  | 516.98 | 515.37  | 6088.16 | 258.61 | .073 | 432.83 | 14914.98 | 5973.08 | 141.23 | .08 | 3431 | 38.604 | .0000 |
| 673.204  | 516.90 | 515.22  | 6088.05 | 264.13 | .075 | 433.40 | 14953.28 | 6114.58 | 141.42 | .08 | 3431 | 38.593 | .0000 |
| 689.204  | 516.81 | 515.06  | 6087.93 | 269.64 | .077 | 433.97 | 14991.39 | 6256.26 | 141.60 | .08 | 3431 | 38.582 | .0000 |
| 703.204  | 516.73 | 514.90  | 6087.81 | 275.14 | .078 | 434.54 | 15029.33 | 6398.13 | 141.78 | .08 | 3430 | 38.571 | .0000 |
| 719.204  | 516.64 | 514.74  | 6087.70 | 280.63 | .080 | 435.12 | 15067.03 | 6540.18 | 141.97 | .08 | 3430 | 38.560 | .0000 |
| 726.191  | 516.59 | 514.60  | 6087.63 | 283.54 | .080 | 435.42 | 15087.04 | 6615.89 | 75.67  | .04 | 3430 | 38.549 | .0000 |
| 741.191  | 516.47 | 514.49  | 6087.55 | 287.12 | .081 | 437.40 | 15224.82 | 6758.46 | 142.49 | .08 | 3431 | 38.543 | .0000 |
| 746.336  | 516.43 | 514.43  | 6087.52 | 288.35 | .082 | 438.07 | 15271.61 | 6807.51 | 49.03  | .03 | 3431 | 38.537 | .0000 |
| 746.346  | 516.43 | 514.39  | 6087.46 | 291.11 | .083 | 439.25 | 15128.10 | 6857.51 | .00    | .00 | 3431 | 38.587 | .0000 |
| 761.346  | 516.43 | 514.39  | 6087.46 | 291.09 | .083 | 2.84   | 15129.74 | 6807.95 | .00    | .43 | 3431 | 38.587 | .0000 |
| 776.346  | 516.41 | 514.35  | 6087.43 | 292.49 | .083 | 196.92 | 15131.41 | 6840.86 | 32.61  | .31 | 3430 | 38.562 | .0000 |
| 791.346  | 516.35 | 514.23  | 6087.33 | 296.63 | .084 | 391.01 | 15133.11 | 6937.00 | 95.96  | .18 | 3430 | 38.532 | .0000 |
| 794.831  | 516.33 | 514.19  | 6087.30 | 297.98 | .085 | 436.10 | 15133.51 | 6968.39 | 31.36  | .02 | 3429 | 38.496 | .0000 |
| 807.831  | 516.22 | 514.02  | 6087.19 | 302.80 | .086 | 437.07 | 15202.42 | 7110.98 | 142.51 | .09 | 3430 | 38.491 | .0000 |
| 824.831  | 516.12 | 513.84  | 6087.07 | 307.61 | .087 | 438.04 | 15270.73 | 7253.91 | 142.84 | .09 | 3430 | 38.480 | .0000 |
| 834.831  | 516.01 | 513.66  | 6086.96 | 312.40 | .089 | 439.02 | 15338.45 | 7397.17 | 143.17 | .09 | 3431 | 38.470 | .0000 |
| 854.781  | 515.89 | 513.48  | 6086.84 | 317.17 | .090 | 439.99 | 15435.35 | 7540.30 | 143.04 | .09 | 3431 | 38.459 | .0000 |
| 869.781  | 515.78 | 513.29  | 6086.72 | 322.02 | .091 | 444.36 | 15469.52 | 7684.90 | 144.50 | .11 | 3436 | 38.450 | .0000 |
| 884.781  | 515.67 | 513.10  | 6086.59 | 326.97 | .093 | 440.85 | 15530.82 | 7831.24 | 146.20 | .14 | 3443 | 38.458 | .0000 |
| 899.781  | 515.58 | 512.96  | 6086.53 | 330.65 | .094 | 452.05 | 15573.86 | 7939.11 | 107.70 | .17 | 3450 | 38.255 | .0000 |
| 914.781  | 515.53 | 512.96  | 6086.54 | 329.16 | .093 | .00    | 15644.78 | 7939.29 | .00    | .18 | 3449 | 37.486 | .0000 |
| 929.781  | 515.54 | 512.96  | 6086.56 | 328.06 | .093 | .00    | 15697.45 | 7939.47 | .00    | .18 | 3449 | 36.717 | .0000 |
| 944.781  | 515.53 | 512.96  | 6086.59 | 327.04 | .093 | .00    | 15747.23 | 7939.71 | .00    | .24 | 3449 | 35.948 | .0000 |
| 959.781  | 515.51 | 512.96  | 6086.62 | 326.00 | .093 | .00    | 15794.14 | 7939.97 | .00    | .26 | 3449 | 35.178 | .0000 |
| 974.781  | 515.50 | 512.96  | 6086.64 | 325.18 | .092 | .00    | 15838.18 | 7940.26 | .00    | .29 | 3449 | 34.409 | .0000 |
| 989.781  | 515.48 | 512.96  | 6086.66 | 324.35 | .092 | .00    | 15879.34 | 7940.57 | .00    | .31 | 3449 | 33.640 | .0000 |
| 1004.781 | 515.47 | 512.96  | 6086.68 | 323.59 | .092 | .00    | 15917.67 | 7940.91 | .00    | .33 | 3449 | 32.871 | .0000 |
| 1019.781 | 515.46 | 512.96  | 6086.70 | 322.89 | .092 | .00    | 15953.62 | 7941.26 | .00    | .35 | 3449 | 32.101 | .0000 |
| 1034.781 | 515.45 | 512.96  | 6086.71 | 322.15 | .091 | .00    | 15985.54 | 7941.64 | .00    | .37 | 3449 | 31.322 | .0000 |
| 1040.791 | 515.45 | 512.96  | 6086.72 | 322.01 | .091 | .00    | 15997.77 | 7941.79 | .00    | .16 | 3449 | 31.024 | .0000 |
| 1055.791 | 515.46 | 512.96  | 6086.70 | 322.58 | .092 | .00    | 15969.84 | 7942.18 | .00    | .39 | 3449 | 30.483 | .0000 |
| 1070.791 | 515.47 | 512.96  | 6086.69 | 323.17 | .092 | .00    | 15941.80 | 7942.57 | .00    | .39 | 3449 | 29.942 | .0000 |
| 1084.171 | 515.47 | 512.96  | 6086.68 | 323.69 | .092 | .00    | 15916.89 | 7942.92 | .00    | .35 | 3449 | 29.459 | .0000 |
| 510.40   | 487.20 | 6050.15 | 996.58  | .284   | .284 | .....  | 15823.73 | 7944.10 | .00    | .72 | 3439 | 29.460 | .0000 |
| 510.40   | 510.40 | 6068.22 | .....   | .....  | .000 | .....  | 10413.12 | .46     | .00    | .46 | 3436 | 20.670 | .0000 |



| SLOT<br>INTERFACE<br>LOCATION<br>IN.    | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|-----------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
|                                         |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 1.1676+02  | 5.1858+02 | 5.1851+02   | 6.0907+03   | 4.7043+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 1.2059+03       |
| AFT                                     | 1.1677+02  | 5.1857+02 | 5.1850+02   | 6.0907+03   | 4.7044+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 1.2059+03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.7192-04 |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 4.2705+02  | 5.1791+02 | 5.1722+02   | 6.0897+03   | 1.5897+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 4.0465+03       |
| AFT                                     | 4.2706+02  | 5.1785+02 | 5.1716+02   | 6.0896+03   | 1.5899+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 4.0465+03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.7020-04 |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 7.4634+02  | 5.1643+02 | 5.1443+02   | 6.0875+03   | 2.6879+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 6.8075+03       |
| AFT                                     | 7.4635+02  | 5.1639+02 | 5.1439+02   | 6.0875+03   | 2.6881+02     | 1.6383+04       | 0.0000        | 0.0000       | 0.0000              | 6.8075+03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.7066-04 |            |           |             |             |               |                 |               |              |                     |                 |

|         |             |      |             |        |             |        |        |        |         |        |       |       |            |              |
|---------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|-------|------------|--------------|
| *PARTON | TIME=103.50 | IS=1 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 891.89 | AINCHI= | 884.78 | DELZ= | 7.104 | ALP=452.15 | ALPHI=450.09 |
| *PARTON | TIME=103.50 | IS=2 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 891.10 | AINCHI= | 884.78 | DELZ= | 6.320 | ALP=452.18 | ALPHI=450.34 |
| *PARTON | TIME=103.50 | IS=3 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 891.25 | AINCHI= | 884.78 | DELZ= | 6.472 | ALP=452.17 | ALPHI=450.29 |
| *PARTON | TIME=103.50 | IS=4 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 892.10 | AINCHI= | 884.78 | DELZ= | 7.315 | ALP=452.15 | ALPHI=450.03 |
| *PARTON | TIME=103.50 | IS=5 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.11 | AINCHI= | 884.78 | DELZ= | 8.324 | ALP=452.12 | ALPHI=449.71 |
| *PARTON | TIME=103.50 | IS=6 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.39 | AINCHI= | 884.78 | DELZ= | 8.607 | ALP=452.11 | ALPHI=449.62 |
| *PARTON | TIME=103.50 | IS=7 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.33 | AINCHI= | 884.78 | DELZ= | 8.551 | ALP=452.12 | ALPHI=449.63 |
| *PARTON | TIME=103.50 | IS=8 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.00 | AINCHI= | 884.78 | DELZ= | 8.216 | ALP=452.13 | ALPHI=449.74 |
| *PARTON | TIME=103.50 | IS=1 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 891.89 | AINCHI= | 884.78 | DELZ= | 7.104 | ALP=452.15 | ALPHI=450.09 |
| *PARTON | TIME=103.50 | IS=2 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 891.10 | AINCHI= | 884.78 | DELZ= | 6.320 | ALP=452.18 | ALPHI=450.34 |
| *PARTON | TIME=103.50 | IS=3 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 891.25 | AINCHI= | 884.78 | DELZ= | 6.472 | ALP=452.17 | ALPHI=450.29 |
| *PARTON | TIME=103.50 | IS=4 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 892.10 | AINCHI= | 884.78 | DELZ= | 7.315 | ALP=452.15 | ALPHI=450.03 |
| *PARTON | TIME=103.50 | IS=5 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.11 | AINCHI= | 884.78 | DELZ= | 8.324 | ALP=452.12 | ALPHI=449.71 |
| *PARTON | TIME=103.50 | IS=6 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.39 | AINCHI= | 884.78 | DELZ= | 8.607 | ALP=452.11 | ALPHI=449.62 |
| *PARTON | TIME=103.50 | IS=7 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.33 | AINCHI= | 884.78 | DELZ= | 8.551 | ALP=452.12 | ALPHI=449.63 |
| *PARTON | TIME=103.50 | IS=8 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.00 | AINCHI= | 884.78 | DELZ= | 8.216 | ALP=452.13 | ALPHI=449.74 |
| *PARTON | TIME=104.00 | IS=1 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 888.56 | AINCHI= | 884.78 | DELZ= | 3.782 | ALP=452.24 | ALPHI=451.17 |
| *PARTON | TIME=104.00 | IS=2 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 887.78 | AINCHI= | 884.78 | DELZ= | 2.994 | ALP=452.26 | ALPHI=451.43 |
| *PARTON | TIME=104.00 | IS=3 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 887.93 | AINCHI= | 884.78 | DELZ= | 3.146 | ALP=452.26 | ALPHI=451.38 |
| *PARTON | TIME=104.00 | IS=4 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 888.78 | AINCHI= | 884.78 | DELZ= | 3.994 | ALP=452.24 | ALPHI=451.11 |
| *PARTON | TIME=104.00 | IS=5 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 889.79 | AINCHI= | 884.78 | DELZ= | 5.008 | ALP=452.21 | ALPHI=450.78 |
| *PARTON | TIME=104.00 | IS=6 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 897.07 | AINCHI= | 884.78 | DELZ= | 5.294 | ALP=452.20 | ALPHI=450.69 |
| *PARTON | TIME=104.00 | IS=7 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.02 | AINCHI= | 884.78 | DELZ= | 5.236 | ALP=452.20 | ALPHI=450.71 |
| *PARTON | TIME=104.00 | IS=8 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 889.68 | AINCHI= | 884.78 | DELZ= | 4.930 | ALP=452.21 | ALPHI=450.82 |
| *PARTON | TIME=104.00 | IS=1 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 888.56 | AINCHI= | 884.78 | DELZ= | 3.782 | ALP=452.24 | ALPHI=451.17 |
| *PARTON | TIME=104.00 | IS=2 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 887.78 | AINCHI= | 884.78 | DELZ= | 2.994 | ALP=452.26 | ALPHI=451.43 |
| *PARTON | TIME=104.00 | IS=3 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 887.93 | AINCHI= | 884.78 | DELZ= | 3.146 | ALP=452.26 | ALPHI=451.38 |
| *PARTON | TIME=104.00 | IS=4 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 888.78 | AINCHI= | 884.78 | DELZ= | 3.994 | ALP=452.24 | ALPHI=451.11 |
| *PARTON | TIME=104.00 | IS=5 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 889.79 | AINCHI= | 884.78 | DELZ= | 5.008 | ALP=452.21 | ALPHI=450.78 |
| *PARTON | TIME=104.00 | IS=6 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 897.07 | AINCHI= | 884.78 | DELZ= | 5.294 | ALP=452.20 | ALPHI=450.69 |
| *PARTON | TIME=104.00 | IS=7 | ZCALC( 68)= | 899.78 | ZCALC( 67)= | 884.78 | AINCW= | 893.02 | AINCHI= | 884.78 | DELZ= | 5.236 | ALP=452.20 | ALPHI=450.71 |



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PARTIAL TIME=104.00 IS=6 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINC# 889.68 AINC# 884.78 DELZ= 4.900 ALP=452.21 ALPHI=450.82

IGNITION TIME, TIME (S)

104.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 9005151.2     | 2024430.5    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 9328047.3     | 2027787.2    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 65405.057     | 14703.642    |
| DELIVERED TOTAL IMPULSE (N•S,LBF•S)        | SRMNTI               | .11471048+10  | .25787941+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 255.85227     | 255.85227    |
| VACUUM TOTAL IMPULSE (N•S,LBF•S)           | SRMVTI               | .11978006+10  | .26909644+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6276623     | 1.6276623    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3559.8972     | 7848.2300    |
| FLOWRATE INTEGRAL (KG,LBM)                 | S•DOTN               | 471250.97     | 1030930.5    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 35.102419     | 77.387509    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 370.55723     | 816.93806    |
| TOTAL BURN AREA (M••2,IN••2)               | ABTOT                | 230.34371     | 357033.47    |
| TOTAL PROPELLANT VOLUME (M••3,IN••3)       | VF                   | 21.567290     | 1316117.3    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 34343.819     | 75715.161    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1192.2354     | 2628.4292    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1596365     | 1.1596365    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.825706     | 28.275842    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1557.7978     | 5110.8853    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .93336130-01  | .93336130-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M••2,LBF/IN••2)          | PH                   | .35306641+09  | 512.07954    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)   | SPHDT                | .49896954+11  | 72369.414    |
| BURN AREA (M••2,IN••2)                     | AHH                  | 3.2578727     | 4972.2126    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .86958662-02  | .34235694    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | .99958962     | 39.353922    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFH                  | .43802103     | 26729.683    |
| GAS VOLUME (M••3,IN••3)                    | VPH                  | 54.665811     | 335912.5     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3382.6353     | 6088.7436    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M••2,IN••2)              | ABCYL                | 227.13584     | 352061.26    |
| SEGMENT FACE BURN AREA (M••2,IN••2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFCYL                | 211127311     | 1289267.6    |
| GAS VOLUME (M••3,IN••3)                    | VP                   | 266.47564     | 16261341.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M••2,LBF/IN••2)  | PON                  | .34746368+09  | 503.95346    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)   | SPONDY               | .47536316+11  | 68945.598    |
| BURN AREA (M••2,IN••2)                     | AAN                  | .00007000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .86972325-02  | .34241073    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .86896526-02  | .34211034    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74820400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52551800     | 20.670000    |
| PROPELLANT VOLUME (M••3,IN••3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M••3,IN••3)                    | VPN                  | 17.947463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3381.2358     | 6086.2244    |
| PORT AREA, NOZ ENT (M••2,IN••2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M••2,IN••2)                   | AT                   | 1.5949059     | 2472.1091    |
| EXPANSION RATIO                            | EPR                  | 6.7392784     | 6.7392784    |
| PRESSURE RATIO                             | PEPU                 | .23409408-01  | .23409408-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP      | INCHES   | AP      | WDOT   | DWDOT  | LB/SEC | DM/DT  | RB     | TAU  | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|---------|----------|---------|--------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      |         |          | SQ. IN. | LB/SEC | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FOUL                        | 512.08 | 512.08 | 6088.74 | 5.08   | .001 | 427.62  | 14548.51 | 113.18  | 107.94 | -5.24  | .3421  | 39.354 | .0000  | .000 | .0000  | .000  |
| 15.000                      | 512.08 | 512.08 | 6088.74 | 11.27  | .003 | 427.88  | 14567.06 | 252.55  | 139.29 | -0.08  | .3421  | 39.310 | .0000  | .000 | .0000  | .000  |
| 35.000                      | 512.08 | 512.07 | 6088.73 | 17.47  | .005 | 428.15  | 14585.57 | 392.00  | 139.38 | -0.08  | .3421  | 39.305 | .0000  | .000 | .0000  | .000  |
| 45.000                      | 512.07 | 512.06 | 6088.72 | 23.66  | .007 | 428.41  | 14604.04 | 531.54  | 139.46 | -0.08  | .3422  | 39.301 | .0000  | .000 | .0000  | .000  |
| 60.000                      | 512.07 | 512.04 | 6088.71 | 29.84  | .008 | 428.68  | 14622.48 | 671.17  | 139.55 | -0.08  | .3422  | 39.296 | .0000  | .000 | .0000  | .000  |
| 75.000                      | 512.06 | 512.03 | 6088.69 | 36.01  | .010 | 428.94  | 14640.88 | 810.88  | 139.64 | -0.08  | .3422  | 39.291 | .0000  | .000 | .0000  | .000  |
| 90.000                      | 512.05 | 512.01 | 6088.68 | 42.16  | .012 | 429.20  | 14659.25 | 950.69  | 139.72 | -0.08  | .3422  | 39.286 | .0000  | .000 | .0000  | .000  |
| 105.000                     | 512.04 | 511.98 | 6088.65 | 48.31  | .014 | 429.47  | 14677.57 | 1090.57 | 139.81 | -0.08  | .3422  | 39.281 | .0000  | .000 | .0000  | .000  |
| 116.761                     | 512.03 | 511.96 | 6088.63 | 53.12  | .015 | 429.68  | 14691.92 | 1200.31 | 109.68 | -0.06  | .3421  | 39.275 | .0000  | .000 | .0000  | .000  |
| 116.771                     | 512.02 | 511.95 | 6088.62 | 56.39  | .016 | 20.37   | 13841.25 | 1200.32 | .00    | -0.00  | .3421  | 39.276 | .0000  | .000 | .0000  | .000  |
| 131.771                     | 512.01 | 511.94 | 6088.62 | 56.64  | .016 | 246.05  | 14278.91 | 1243.94 | 43.38  | -0.25  | .3421  | 39.276 | .0000  | .000 | .0000  | .000  |
| 143.919                     | 512.00 | 511.92 | 6088.61 | 59.23  | .017 | 428.83  | 14633.87 | 1333.03 | 88.99  | -0.11  | .3421  | 39.269 | .0000  | .000 | .0000  | .000  |
| 150.919                     | 511.99 | 511.86 | 6088.58 | 65.20  | .018 | 429.76  | 14690.28 | 1472.90 | 139.79 | -0.08  | .3421  | 39.263 | .0000  | .000 | .0000  | .000  |
| 173.919                     | 511.96 | 511.84 | 6088.55 | 71.14  | .020 | 430.68  | 14746.42 | 1613.07 | 140.09 | -0.08  | .3421  | 39.257 | .0000  | .000 | .0000  | .000  |
| 190.919                     | 511.94 | 511.80 | 6088.51 | 77.05  | .022 | 431.61  | 14802.28 | 1753.54 | 140.39 | -0.08  | .3421  | 39.251 | .0000  | .000 | .0000  | .000  |
| 203.919                     | 511.92 | 511.75 | 6088.48 | 82.93  | .024 | 432.54  | 14857.87 | 1894.31 | 141.00 | -0.08  | .3421  | 39.245 | .0000  | .000 | .0000  | .000  |
| 218.919                     | 511.89 | 511.71 | 6088.44 | 88.78  | .025 | 433.46  | 14913.19 | 2035.39 | 141.00 | -0.08  | .3421  | 39.232 | .0000  | .000 | .0000  | .000  |
| 233.919                     | 511.87 | 511.65 | 6088.39 | 94.61  | .027 | 434.39  | 14968.23 | 2176.77 | 141.30 | -0.08  | .3421  | 39.225 | .0000  | .000 | .0000  | .000  |
| 248.919                     | 511.84 | 511.60 | 6088.35 | 100.41 | .028 | 435.32  | 15023.01 | 2318.45 | 141.61 | -0.08  | .3422  | 39.219 | .0000  | .000 | .0000  | .000  |
| 263.919                     | 511.81 | 511.54 | 6088.30 | 106.18 | .030 | 436.24  | 15077.50 | 2460.45 | 141.92 | -0.08  | .3422  | 39.212 | .0000  | .000 | .0000  | .000  |
| 278.919                     | 511.78 | 511.48 | 6088.25 | 111.94 | .032 | 437.17  | 15131.73 | 2602.76 | 142.22 | -0.08  | .3422  | 39.205 | .0000  | .000 | .0000  | .000  |
| 293.919                     | 511.74 | 511.41 | 6088.20 | 117.66 | .033 | 438.10  | 15185.60 | 2745.37 | 142.53 | -0.08  | .3422  | 39.198 | .0000  | .000 | .0000  | .000  |
| 308.919                     | 511.71 | 511.34 | 6088.15 | 123.37 | .035 | 439.02  | 15239.36 | 2888.30 | 142.84 | -0.08  | .3422  | 39.191 | .0000  | .000 | .0000  | .000  |
| 323.919                     | 511.67 | 511.27 | 6088.09 | 129.05 | .037 | 439.95  | 15292.77 | 3031.53 | 143.15 | -0.08  | .3422  | 39.184 | .0000  | .000 | .0000  | .000  |
| 338.919                     | 511.63 | 511.19 | 6088.03 | 134.71 | .038 | 440.87  | 15345.90 | 3175.07 | 143.46 | -0.09  | .3423  | 39.177 | .0000  | .000 | .0000  | .000  |
| 353.919                     | 511.59 | 511.12 | 6087.97 | 140.35 | .040 | 441.80  | 15398.76 | 3318.92 | 143.76 | -0.09  | .3423  | 39.169 | .0000  | .000 | .0000  | .000  |
| 368.919                     | 511.54 | 511.03 | 6087.91 | 145.97 | .041 | 442.73  | 15451.35 | 3463.08 | 144.07 | -0.09  | .3423  | 39.162 | .0000  | .000 | .0000  | .000  |
| 383.919                     | 511.50 | 510.95 | 6087.85 | 151.57 | .043 | 443.65  | 15503.66 | 3607.55 | 144.38 | -0.09  | .3423  | 39.154 | .0000  | .000 | .0000  | .000  |
| 398.919                     | 511.45 | 510.86 | 6087.78 | 157.15 | .045 | 444.58  | 15555.70 | 3752.33 | 144.70 | -0.09  | .3423  | 39.147 | .0000  | .000 | .0000  | .000  |
| 413.919                     | 511.44 | 510.84 | 6087.76 | 158.69 | .045 | 444.84  | 15569.98 | 3792.24 | 144.67 | -0.09  | .3423  | 39.145 | .0000  | .000 | .0000  | .000  |
| 428.919                     | 511.39 | 510.74 | 6087.68 | 165.00 | .047 | 445.77  | 15622.84 | 3937.00 | 144.67 | -0.09  | .3425  | 39.138 | .0000  | .000 | .0000  | .000  |
| 443.919                     | 511.37 | 510.69 | 6087.63 | 168.78 | .048 | 446.68  | 15675.32 | 4081.62 | 86.57  | -0.05  | .3426  | 39.138 | .0000  | .000 | .0000  | .000  |
| 458.919                     | 511.36 | 510.60 | 6087.49 | 178.72 | .051 | -281.97 | 14674.16 | 4233.62 | .00    | -0.00  | .3425  | 39.164 | .0000  | .000 | .0000  | .000  |
| 473.919                     | 511.37 | 510.60 | 6087.49 | 179.38 | .051 | 12.49   | 14621.92 | 4024.07 | .00    | -0.45  | .3421  | 39.163 | .0000  | .000 | .0000  | .000  |
| 488.919                     | 511.36 | 510.56 | 6087.44 | 182.39 | .052 | 306.95  | 14568.26 | 4076.29 | 51.96  | -0.26  | .3418  | 39.135 | .0000  | .000 | .0000  | .000  |
| 503.919                     | 511.34 | 510.52 | 6087.41 | 184.88 | .052 | 427.54  | 14545.88 | 4125.27 | 48.93  | -0.05  | .3418  | 39.094 | .0000  | .000 | .0000  | .000  |
| 518.919                     | 511.28 | 510.41 | 6087.32 | 190.62 | .054 | 428.11  | 14586.89 | 4264.52 | 139.17 | -0.08  | .3418  | 39.073 | .0000  | .000 | .0000  | .000  |
| 533.919                     | 510.20 | 510.30 | 6087.24 | 196.34 | .056 | 428.68  | 14627.70 | 4403.95 | 139.35 | -0.08  | .3418  | 39.063 | .0000  | .000 | .0000  | .000  |
| 548.919                     | 510.16 | 510.18 | 6087.15 | 202.05 | .057 | 429.26  | 14668.31 | 4543.56 | 139.53 | -0.08  | .3417  | 39.053 | .0000  | .000 | .0000  | .000  |
| 563.919                     | 510.06 | 510.06 | 6087.06 | 207.74 | .059 | 429.83  | 14708.74 | 4683.35 | 139.71 | -0.08  | .3417  | 39.043 | .0000  | .000 | .0000  | .000  |
| 578.919                     | 510.04 | 509.94 | 6086.96 | 213.41 | .061 | 430.40  | 14748.96 | 4823.32 | 139.89 | -0.08  | .3417  | 39.033 | .0000  | .000 | .0000  | .000  |
| 593.919                     | 510.00 | 509.86 | 6086.87 | 219.07 | .062 | 430.97  | 14789.03 | 4963.46 | 140.07 | -0.08  | .3417  | 39.023 | .0000  | .000 | .0000  | .000  |
| 608.919                     | 510.00 | 509.86 | 6086.77 | 224.71 | .064 | 431.55  | 14828.83 | 5103.79 | 140.24 | -0.08  | .3417  | 39.012 | .0000  | .000 | .0000  | .000  |
| 623.919                     | 510.00 | 509.86 | 6086.67 | 230.34 | .065 | 432.12  | 14868.48 | 5244.29 | 140.42 | -0.08  | .3417  | 39.001 | .0000  | .000 | .0000  | .000  |
| 638.919                     | 510.00 | 509.86 | 6086.57 | 235.95 | .067 | 432.69  | 14907.93 | 5384.98 | 140.61 | -0.08  | .3417  | 38.991 | .0000  | .000 | .0000  | .000  |
| 653.919                     | 510.00 | 509.86 | 6086.46 | 241.55 | .069 | 433.26  | 14947.18 | 5525.85 | 140.79 | -0.08  | .3417  | 38.980 | .0000  | .000 | .0000  | .000  |

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|          |        |        |         |        |       |         |          |         |        |       |      |        |       |
|----------|--------|--------|---------|--------|-------|---------|----------|---------|--------|-------|------|--------|-------|
| 628.204  | 510.59 | 509.13 | 6086.35 | 247.14 | 0.070 | 433.43  | 149H.24  | 5666.91 | 140.97 | -0.08 | 3416 | 38.969 | 0.000 |
| 643.204  | 510.51 | 508.99 | 6086.35 | 252.71 | 0.072 | 434.41  | 15025.10 | 5908.15 | 141.16 | -0.09 | 3416 | 38.958 | 0.000 |
| 658.204  | 510.43 | 508.84 | 6086.35 | 258.27 | 0.073 | 434.98  | 15063.77 | 5949.58 | 141.34 | -0.08 | 3416 | 38.947 | 0.000 |
| 673.204  | 510.34 | 508.69 | 6086.35 | 263.81 | 0.075 | 435.55  | 15102.25 | 6091.19 | 141.53 | -0.08 | 3416 | 38.936 | 0.000 |
| 688.204  | 510.26 | 508.53 | 6086.35 | 269.35 | 0.076 | 436.12  | 15140.53 | 6232.99 | 141.71 | -0.09 | 3416 | 38.925 | 0.000 |
| 703.204  | 510.17 | 508.38 | 6086.35 | 274.87 | 0.078 | 436.75  | 15170.62 | 6374.96 | 141.89 | -0.09 | 3416 | 38.914 | 0.000 |
| 718.204  | 510.08 | 508.21 | 6086.35 | 280.39 | 0.080 | 437.27  | 15214.51 | 6517.13 | 142.08 | -0.05 | 3416 | 38.892 | 0.000 |
| 726.191  | 510.04 | 508.13 | 6086.35 | 286.93 | 0.081 | 439.55  | 15375.10 | 6735.59 | 142.61 | -0.09 | 3417 | 38.886 | 0.000 |
| 741.191  | 509.92 | 507.96 | 6086.35 | 288.18 | 0.082 | 440.23  | 15422.14 | 6784.70 | 149.68 | -0.03 | 3418 | 38.879 | 0.000 |
| 746.336  | 509.88 | 507.90 | 6086.35 | 295.22 | 0.084 | -226.91 | 15056.44 | 6784.70 | 0.00   | -0.00 | 3418 | 38.929 | 0.000 |
| 746.346  | 509.88 | 507.90 | 6086.35 | 295.22 | 0.084 | -21.13  | 15126.30 | 6785.15 | 0.03   | -0.45 | 3417 | 38.930 | 0.000 |
| 761.346  | 509.82 | 507.80 | 6086.35 | 293.88 | 0.083 | 184.65  | 15196.45 | 6812.05 | 26.58  | -0.32 | 3416 | 38.905 | 0.000 |
| 776.346  | 509.77 | 507.77 | 6086.35 | 293.70 | 0.083 | 390.43  | 15266.87 | 6905.72 | 93.48  | -0.19 | 3416 | 38.875 | 0.000 |
| 791.346  | 509.75 | 507.66 | 6086.35 | 297.43 | 0.084 | 438.24  | 15283.27 | 6937.04 | 31.29  | -0.02 | 3415 | 38.839 | 0.000 |
| 794.631  | 509.72 | 507.62 | 6086.35 | 297.48 | 0.084 | 439.22  | 15352.55 | 7079.76 | 142.62 | -0.09 | 3416 | 38.833 | 0.000 |
| 809.631  | 509.62 | 507.45 | 6086.35 | 302.33 | 0.086 | 440.14  | 15421.23 | 7222.82 | 142.97 | -0.09 | 3417 | 38.823 | 0.000 |
| 824.631  | 509.51 | 507.27 | 6086.35 | 307.16 | 0.087 | 441.17  | 15489.30 | 7366.23 | 143.31 | -0.09 | 3417 | 38.812 | 0.000 |
| 839.631  | 509.40 | 507.09 | 6086.35 | 310.79 | 0.089 | 442.14  | 15556.54 | 7509.50 | 143.18 | -0.09 | 3418 | 38.802 | 0.000 |
| 854.781  | 509.29 | 506.91 | 6086.35 | 321.99 | 0.090 | 446.52  | 15605.89 | 7654.27 | 144.66 | -0.11 | 3424 | 38.793 | 0.000 |
| 869.781  | 509.19 | 506.73 | 6086.35 | 327.28 | 0.091 | 451.01  | 15652.82 | 7800.82 | 146.41 | -0.14 | 3432 | 38.802 | 0.000 |
| 884.781  | 509.08 | 506.54 | 6086.35 | 327.28 | 0.093 | 452.23  | 15665.97 | 7843.21 | 42.20  | -0.18 | 3434 | 38.255 | 0.000 |
| 899.781  | 509.05 | 506.48 | 6086.35 | 327.28 | 0.093 | 0.00    | 15739.43 | 7843.41 | 0.00   | -0.20 | 3434 | 37.486 | 0.000 |
| 914.781  | 509.02 | 506.48 | 6086.35 | 326.48 | 0.093 | 0.00    | 15779.12 | 7843.63 | 0.00   | -0.21 | 3434 | 36.717 | 0.000 |
| 929.781  | 509.01 | 506.48 | 6086.35 | 325.72 | 0.092 | 0.00    | 15816.39 | 7843.87 | 0.00   | -0.24 | 3434 | 35.948 | 0.000 |
| 944.781  | 509.00 | 506.48 | 6086.35 | 325.02 | 0.092 | 0.00    | 15851.25 | 7844.13 | 0.00   | -0.26 | 3434 | 35.178 | 0.000 |
| 959.781  | 508.99 | 506.48 | 6086.35 | 324.37 | 0.092 | 0.00    | 15883.69 | 7844.42 | 0.00   | -0.29 | 3434 | 34.409 | 0.000 |
| 974.781  | 508.98 | 506.48 | 6086.35 | 323.77 | 0.092 | 0.00    | 15913.72 | 7844.73 | 0.00   | -0.31 | 3434 | 33.640 | 0.000 |
| 989.781  | 508.97 | 506.48 | 6086.35 | 323.22 | 0.092 | 0.00    | 15941.33 | 7845.06 | 0.00   | -0.33 | 3434 | 32.871 | 0.000 |
| 1004.781 | 508.96 | 506.48 | 6086.35 | 322.73 | 0.092 | 0.00    | 15966.53 | 7845.41 | 0.00   | -0.35 | 3434 | 32.101 | 0.000 |
| 1019.781 | 508.95 | 506.48 | 6086.35 | 322.28 | 0.091 | 0.00    | 15989.32 | 7845.78 | 0.00   | -0.37 | 3434 | 31.332 | 0.000 |
| 1034.781 | 508.94 | 506.48 | 6086.35 | 322.12 | 0.091 | 0.00    | 15997.77 | 7845.94 | 0.00   | -0.15 | 3434 | 31.024 | 0.000 |
| 1049.791 | 508.94 | 506.48 | 6086.35 | 322.70 | 0.092 | 0.00    | 15969.84 | 7846.32 | 0.00   | -0.39 | 3434 | 30.483 | 0.000 |
| 1065.791 | 508.95 | 506.48 | 6086.35 | 323.28 | 0.092 | 0.00    | 15941.80 | 7846.71 | 0.00   | -0.39 | 3434 | 29.942 | 0.000 |
| 1070.791 | 508.96 | 506.48 | 6086.35 | 323.80 | 0.092 | 0.00    | 15916.69 | 7847.06 | 0.00   | -0.35 | 3434 | 29.459 | 0.000 |
| 1084.171 | 508.97 | 506.48 | 6086.35 | 996.97 | 0.284 | 0.00    | 15823.73 | 7848.23 | 0.00   | -0.71 | 3424 | 29.460 | 0.000 |
| APT(A)   | 503.95 | 481.03 | 6086.22 | 996.97 | 0.000 | 0.00    | 10413.12 | 0.46    | 0.00   | -0.46 | 3421 | 20.670 | 0.000 |
| APT(B)   | 503.95 | 503.95 | 6086.22 | 996.97 | 0.000 | 0.00    | 10413.12 | 0.46    | 0.00   | -0.46 | 3421 | 20.670 | 0.000 |

|                                         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PD<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|-----------------------------------------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD                                 | 1.1676*02                            | 5.1203*02  | 5.1196*02 | 6.0886*03   | 4.7413*01   | 1.6460*04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.2003*03       |
| AFT                                     | 1.1677*02                            | 5.1202*02  | 5.1195*02 | 6.0886*03   | 4.7414*01   | 1.6460*04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.2003*03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.6943-04 |                                      |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 4.2705*02                            | 5.1137*02  | 5.1069*02 | 6.0876*03   | 1.6606*02   | 1.6383*04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 4.0236*03       |
| AFT                                     | 4.2706*02                            | 5.1128*02  | 5.1060*02 | 6.0875*03   | 1.6608*02   | 1.6383*04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 4.0236*03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.6778-04 |                                      |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 7.4634*02                            | 5.0988*02  | 5.0790*02 | 6.0855*03   | 2.7127*02   | 1.6383*04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 6.7847*03       |
| AFT                                     | 7.4635*02                            | 5.0978*02  | 5.0780*02 | 6.0853*03   | 2.7132*02   | 1.6383*04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 6.7847*03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.6836-04 |                                      |            |           |             |             |               |                 |               |              |                     |                 |

|                                                                                                                                  |          |              |               |                  |               |
|----------------------------------------------------------------------------------------------------------------------------------|----------|--------------|---------------|------------------|---------------|
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 2 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.00 |
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 3 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.00 |
| *PARTBN* TIME=104.50 IS=2 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 884.47 AINCHI= 869.78 DELZ=14.687 ALP=452.35 ALPHI=448.00 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=3 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 884.62 AINCHI= 869.78 DELZ=14.839 ALP=452.35 ALPHI=447.95 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=4 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 885.25 AINCHI= 884.78 DELZ= .465 ALP=452.33 ALPHI=452.25  |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=5 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 885.46 AINCHI= 884.78 DELZ= .678 ALP=452.33 ALPHI=452.18  |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=6 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.48 AINCHI= 884.78 DELZ= 1.699 ALP=452.30 ALPHI=451.85 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=7 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.77 AINCHI= 884.78 DELZ= 1.987 ALP=452.29 ALPHI=451.76 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=8 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.71 AINCHI= 884.78 DELZ= 1.931 ALP=452.29 ALPHI=451.78 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=1 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.37 AINCHI= 884.78 DELZ= 1.590 ALP=452.30 ALPHI=451.89 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=2 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 884.47 AINCHI= 869.78 DELZ=14.687 ALP=452.35 ALPHI=448.00 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=3 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 884.62 AINCHI= 869.78 DELZ=14.839 ALP=452.35 ALPHI=447.95 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=4 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 885.25 AINCHI= 884.78 DELZ= .465 ALP=452.33 ALPHI=452.25  |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=5 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 885.46 AINCHI= 884.78 DELZ= .678 ALP=452.33 ALPHI=452.18  |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=6 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.48 AINCHI= 884.78 DELZ= 1.699 ALP=452.30 ALPHI=451.85 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=7 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.77 AINCHI= 884.78 DELZ= 1.987 ALP=452.29 ALPHI=451.76 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=8 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.71 AINCHI= 884.78 DELZ= 1.931 ALP=452.29 ALPHI=451.78 |          |              |               |                  |               |
| *PARTBN* TIME=104.50 IS=1 ZCALC( 68)= 899.78 ZCALC( 67)= 884.78 AINCW= 886.37 AINCHI= 884.78 DELZ= 1.590 ALP=452.30 ALPHI=451.89 |          |              |               |                  |               |
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 4 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.50 |
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 5 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.50 |
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 6 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.50 |
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 7 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.50 |
| WEB BURNOUT INCREMENT LOCATION =                                                                                                 | 884.7810 | SECTOR NO. 8 | TAU = 39.0245 | TAUWDP = 39.0245 | TIME = 104.50 |
| *PARTBN* TIME=105.00 IS=1 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 881.95 AINCHI= 869.78 DELZ=12.170 ALP=452.42 ALPHI=448.83 |          |              |               |                  |               |
| *PARTBN* TIME=105.00 IS=2 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 881.17 AINCHI= 869.78 DELZ=11.389 ALP=452.44 ALPHI=449.08 |          |              |               |                  |               |
| *PARTBN* TIME=105.00 IS=3 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 881.32 AINCHI= 869.78 DELZ=11.542 ALP=452.44 ALPHI=449.03 |          |              |               |                  |               |
| *PARTBN* TIME=105.00 IS=4 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 882.16 AINCHI= 869.78 DELZ=12.383 ALP=452.41 ALPHI=448.77 |          |              |               |                  |               |
| *PARTBN* TIME=105.00 IS=5 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.18 AINCHI= 869.78 DELZ=13.404 ALP=452.39 ALPHI=448.45 |          |              |               |                  |               |
| *PARTBN* TIME=105.00 IS=6 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.47 AINCHI= 869.78 DELZ=13.693 ALP=452.38 ALPHI=448.36 |          |              |               |                  |               |
| *PARTBN* TIME=105.00 IS=7 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.42 AINCHI= 869.78 DELZ=13.636 ALP=452.38 ALPHI=448.37 |          |              |               |                  |               |

•PARTBN• TIME=105.00 IS=8 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.08 AINCHI= 869.78 DELZ=13.294 ALP=452.39 ALPHI=448.48  
•PARTBN• TIME=105.00 IS=1 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 881.95 AINCHI= 869.78 DELZ=12.170 ALP=452.42 ALPHI=448.83  
•PARTBN• TIME=105.00 IS=2 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 881.17 AINCHI= 869.78 DELZ=11.389 ALP=452.44 ALPHI=449.08  
•PARTBN• TIME=105.00 IS=3 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 881.32 AINCHI= 869.78 DELZ=11.542 ALP=452.44 ALPHI=449.03  
•PARTBN• TIME=105.00 IS=4 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 882.16 AINCHI= 869.78 DELZ=12.383 ALP=452.41 ALPHI=448.77  
•PARTBN• TIME=105.00 IS=5 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.18 AINCHI= 869.78 DELZ=13.404 ALP=452.39 ALPHI=448.45  
•PARTBN• TIME=105.00 IS=6 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.47 AINCHI= 869.78 DELZ=13.693 ALP=452.38 ALPHI=448.36  
•PARTBN• TIME=105.00 IS=7 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.42 AINCHI= 869.78 DELZ=13.636 ALP=452.38 ALPHI=448.37  
•PARTBN• TIME=105.00 IS=8 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 883.08 AINCHI= 869.78 DELZ=13.294 ALP=452.39 ALPHI=448.48

IGNITION TIME, TIME (S)

105.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>NOZON PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 8896774.1     | 2000074.4    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 8710651.0     | 2003194.0    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 65775.563     | 14786.935    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMOTI               | .11500556*10  | .25989165*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 255.80352     | 255.80352    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .12059650*10  | .27111190*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6278116     | 1.6278116    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | MDOT                 | 3516.7747     | 7753.1610    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 474789.27     | 1046731.2    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 35.301268     | 77.825974    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 335.30507     | 739.22115    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 228.07938     | 353523.74    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 19.524495     | 1191457.8    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 30013.178     | 67931.429    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1192.2476     | 2628.4561    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1576303     | 1.1596303    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.824162     | 28.272438    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1557.6820     | 5110.5054    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .92760691-01  | .92760691-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .34659611*09  | 505.59592    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .50247781*11  | 72878.246    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 3.0358070     | 4705.5103    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .86583266-02  | .34087900    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.0082761     | 39.695909    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .41094202     | 25077.221    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.692890     | 3337564.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3381.5188     | 6086.7338    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 225.04357     | 348818.23    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VECYL                | 19.111507     | 1166260.8    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 270.72859     | 16520872.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .34306194*09  | 497.56928    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .47881575*11  | 69446.354    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(1+1,1)           | .86585191-02  | .34388658    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(1+2,1)           | .86509160-02  | .34058725    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(1+1,1)          | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(1+2,1)          | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.647463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(1+2,3)          | 3380.1363     | 6084.2454    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5956321     | 2473.2346    |
| EXPANSION RATIO                            | EPR                  | 6.7362115     | 6.7362115    |
| PRESSURE RATIO                             | PEPO                 | .23423770-01  | .23423770-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | ANRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |



## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | PSIA    | P      | T    | U      | H        | LP      | AP      | WDOT   | DNDOT  | OW/DT  | RB     | TAU  | RATO   | TAUTO |
|-----------------------------|--------|---------|--------|------|--------|----------|---------|---------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   | DEG. R  | FT/SEC |      |        |          | INCHES  | SQ. IN. | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FORE                        | 505.60 | 6086.73 | 4.79   | .001 | 429.75 | 14695.02 | 106.90  | 101.71  | -5.19  | .3406  | 39.696 | .0000  | .000 | .0000  | .000  |
| 15.000                      | 505.59 | 6086.73 | 11.02  | .003 | 430.02 | 14713.66 | 246.35  | 139.38  | -.08   | .3407  | 39.652 | .0000  | .000 | .0000  | .000  |
| 30.000                      | 505.59 | 6086.72 | 17.24  | .005 | 430.29 | 14732.27 | 305.89  | 139.46  | -.08   | .3407  | 39.647 | .0000  | .000 | .0000  | .000  |
| 45.000                      | 505.59 | 6086.71 | 23.45  | .007 | 430.55 | 14750.83 | 525.52  | 139.55  | -.08   | .3407  | 39.643 | .0000  | .000 | .0000  | .000  |
| 60.000                      | 505.58 | 6086.70 | 29.65  | .008 | 430.82 | 14769.36 | 665.24  | 139.64  | -.08   | .3407  | 39.638 | .0000  | .000 | .0000  | .000  |
| 75.000                      | 505.57 | 6086.68 | 35.84  | .010 | 431.08 | 14787.85 | 805.04  | 139.72  | -.08   | .3407  | 39.633 | .0000  | .000 | .0000  | .000  |
| 90.000                      | 505.56 | 6086.67 | 42.01  | .012 | 431.35 | 14806.31 | 944.93  | 139.81  | -.08   | .3407  | 39.628 | .0000  | .000 | .0000  | .000  |
| 105.000                     | 505.55 | 6086.64 | 48.18  | .014 | 431.62 | 14824.72 | 1084.90 | 139.90  | -.08   | .3407  | 39.623 | .0000  | .000 | .0000  | .000  |
| 116.761                     | 505.54 | 6086.62 | 53.01  | .015 | 431.82 | 14839.13 | 1194.71 | 109.75  | -.06   | .3407  | 39.617 | .0000  | .000 | .0000  | .000  |
| 116.771                     | 505.54 | 6086.61 | 56.85  | .016 | 431.82 | 14839.13 | 1194.72 | .00     | -.00   | .3406  | 39.618 | .0000  | .000 | .0000  | .000  |
| 131.771                     | 505.53 | 6086.61 | 56.08  | .016 | 431.96 | 14858.15 | 1223.02 | 28.02   | -.28   | .3406  | 39.618 | .0000  | .000 | .0000  | .000  |
| 143.919                     | 505.52 | 6086.60 | 58.28  | .017 | 430.97 | 14783.79 | 1359.32 | 85.19   | -.11   | .3406  | 39.611 | .0000  | .000 | .0000  | .000  |
| 153.919                     | 505.50 | 6086.57 | 64.27  | .018 | 431.89 | 14837.56 | 1448.27 | 139.87  | -.08   | .3406  | 39.605 | .0000  | .000 | .0000  | .000  |
| 173.919                     | 505.48 | 6086.54 | 70.24  | .020 | 432.82 | 14894.04 | 1588.53 | 140.17  | -.08   | .3406  | 39.599 | .0000  | .000 | .0000  | .000  |
| 186.919                     | 505.46 | 6086.51 | 76.17  | .022 | 433.75 | 14950.25 | 1729.09 | 140.48  | -.08   | .3407  | 39.593 | .0000  | .000 | .0000  | .000  |
| 203.919                     | 505.44 | 6086.47 | 82.07  | .023 | 434.68 | 15006.18 | 1869.96 | 140.79  | -.08   | .3407  | 39.586 | .0000  | .000 | .0000  | .000  |
| 218.919                     | 505.41 | 6086.43 | 87.95  | .025 | 435.60 | 15061.84 | 2011.13 | 141.10  | -.08   | .3407  | 39.580 | .0000  | .000 | .0000  | .000  |
| 233.919                     | 505.39 | 6086.39 | 93.80  | .027 | 436.53 | 15117.22 | 2152.62 | 141.40  | -.08   | .3407  | 39.574 | .0000  | .000 | .0000  | .000  |
| 248.919                     | 505.36 | 6086.35 | 99.63  | .028 | 437.46 | 15172.32 | 2294.42 | 141.71  | -.08   | .3407  | 39.567 | .0000  | .000 | .0000  | .000  |
| 263.919                     | 505.33 | 6086.30 | 105.43 | .030 | 438.38 | 15227.14 | 2436.53 | 142.02  | -.08   | .3408  | 39.560 | .0000  | .000 | .0000  | .000  |
| 278.919                     | 505.30 | 6086.25 | 111.21 | .032 | 439.31 | 15281.69 | 2578.94 | 142.33  | -.09   | .3408  | 39.554 | .0000  | .000 | .0000  | .000  |
| 293.919                     | 505.27 | 6086.20 | 116.96 | .033 | 440.24 | 15335.97 | 2721.66 | 142.64  | -.09   | .3408  | 39.547 | .0000  | .000 | .0000  | .000  |
| 308.919                     | 505.23 | 6086.15 | 122.69 | .035 | 441.17 | 15389.96 | 2864.69 | 142.94  | -.09   | .3408  | 39.540 | .0000  | .000 | .0000  | .000  |
| 323.919                     | 505.19 | 6086.09 | 128.40 | .036 | 442.09 | 15443.68 | 3008.03 | 143.25  | -.09   | .3408  | 39.533 | .0000  | .000 | .0000  | .000  |
| 338.919                     | 505.15 | 6086.03 | 134.08 | .038 | 443.02 | 15497.12 | 3151.68 | 143.57  | -.09   | .3409  | 39.526 | .0000  | .000 | .0000  | .000  |
| 353.919                     | 505.11 | 6085.97 | 139.75 | .040 | 443.95 | 15550.29 | 3295.66 | 143.88  | -.09   | .3409  | 39.519 | .0000  | .000 | .0000  | .000  |
| 368.919                     | 505.07 | 6085.91 | 145.40 | .041 | 444.88 | 15603.18 | 3439.95 | 144.20  | -.09   | .3409  | 39.511 | .0000  | .000 | .0000  | .000  |
| 383.919                     | 505.02 | 6085.84 | 151.02 | .043 | 445.80 | 15655.79 | 3584.56 | 144.52  | -.09   | .3410  | 39.504 | .0000  | .000 | .0000  | .000  |
| 398.919                     | 504.98 | 6085.77 | 156.63 | .044 | 446.73 | 15708.13 | 3729.49 | 144.84  | -.09   | .3410  | 39.496 | .0000  | .000 | .0000  | .000  |
| 403.048                     | 504.96 | 6085.76 | 158.17 | .045 | 446.99 | 15722.48 | 3769.43 | 39.92   | -.03   | .3410  | 39.489 | .0000  | .000 | .0000  | .000  |
| 418.048                     | 504.92 | 6085.68 | 164.50 | .047 | 445.12 | 15705.77 | 3714.33 | 44.81   | -.09   | .3412  | 39.487 | .0000  | .000 | .0000  | .000  |
| 427.051                     | 504.90 | 6085.63 | 168.30 | .048 | 444.01 | 15687.91 | 4001.04 | 86.65   | -.06   | .3412  | 39.481 | .0000  | .000 | .0000  | .000  |
| 427.061                     | 504.89 | 6085.45 | 181.19 | .051 | 429.75 | 14675.00 | 4001.04 | .00     | -.00   | .3412  | 39.506 | .0000  | .000 | .0000  | .000  |
| 442.061                     | 504.89 | 6085.46 | 180.64 | .051 | 425    | 14621.35 | 4001.49 | .00     | -.45   | .3407  | 39.505 | .0000  | .000 | .0000  | .000  |
| 457.061                     | 504.86 | 6085.43 | 187.31 | .052 | 366.07 | 14670.96 | 4052.01 | 50.26   | -.26   | .3403  | 39.477 | .0000  | .000 | .0000  | .000  |
| 463.204                     | 504.84 | 6085.41 | 184.25 | .052 | 429.67 | 14692.21 | 4100.86 | 48.80   | -.05   | .3403  | 39.436 | .0000  | .000 | .0000  | .000  |
| 478.204                     | 504.78 | 6085.32 | 190.02 | .054 | 435.25 | 14733.43 | 4240.19 | 139.25  | -.08   | .3403  | 39.415 | .0000  | .000 | .0000  | .000  |
| 493.204                     | 504.72 | 6085.24 | 195.77 | .056 | 430.82 | 14774.46 | 4379.70 | 139.43  | -.08   | .3403  | 39.405 | .0000  | .000 | .0000  | .000  |
| 508.204                     | 504.66 | 6085.15 | 201.50 | .057 | 431.39 | 14815.28 | 4519.40 | 139.61  | -.08   | .3403  | 39.395 | .0000  | .000 | .0000  | .000  |
| 523.204                     | 504.60 | 6085.05 | 207.21 | .059 | 431.96 | 14855.91 | 4659.27 | 139.79  | -.08   | .3402  | 39.385 | .0000  | .000 | .0000  | .000  |
| 538.204                     | 504.53 | 6084.96 | 212.91 | .060 | 432.54 | 14896.34 | 4799.32 | 139.97  | -.08   | .3402  | 39.374 | .0000  | .000 | .0000  | .000  |
| 553.204                     | 504.46 | 6084.87 | 218.59 | .062 | 433.11 | 14936.58 | 4939.56 | 140.16  | -.08   | .3402  | 39.364 | .0000  | .000 | .0000  | .000  |
| 568.204                     | 504.39 | 6084.77 | 224.26 | .064 | 433.68 | 14976.61 | 5079.99 | 140.34  | -.08   | .3402  | 39.353 | .0000  | .000 | .0000  | .000  |
| 583.204                     | 504.32 | 6084.67 | 229.91 | .065 | 434.26 | 15016.45 | 5220.60 | 140.53  | -.08   | .3402  | 39.343 | .0000  | .000 | .0000  | .000  |
| 598.204                     | 504.25 | 6084.56 | 235.55 | .067 | 434.83 | 15056.09 | 5361.39 | 140.71  | -.08   | .3402  | 39.332 | .0000  | .000 | .0000  | .000  |
| 613.204                     | 504.18 | 6084.46 | 241.17 | .068 | 435.40 | 15095.54 | 5502.37 | 140.93  | -.09   | .3402  | 39.321 | .0000  | .000 | .0000  | .000  |



|          |        |        |         |        |      |        |          |         |        |      |       |        |       |       |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|------|-------|--------|-------|-------|
| 628.204  | 504.10 | 502.67 | 6084.35 | 246.78 | .070 | 435.98 | 15134.78 | 5643.54 | 141.08 | -.09 | .3402 | 39.310 | .0000 | .000  |
| 643.204  | 504.02 | 502.62 | 6084.24 | 252.38 | .072 | 436.56 | 15173.83 | 5784.89 | 141.26 | -.09 | .3402 | 39.299 | .0000 | .000  |
| 658.204  | 503.94 | 502.36 | 6084.13 | 257.97 | .073 | 437.12 | 15212.68 | 5926.42 | 141.45 | -.09 | .3402 | 39.288 | .0000 | .000  |
| 673.204  | 503.86 | 502.23 | 6084.02 | 263.54 | .075 | 437.69 | 15251.33 | 6068.14 | 141.63 | -.09 | .3402 | 39.277 | .0000 | .000  |
| 688.204  | 503.77 | 502.07 | 6083.90 | 269.10 | .076 | 438.27 | 15289.79 | 6210.05 | 141.82 | -.09 | .3402 | 39.266 | .0000 | .000  |
| 703.204  | 503.69 | 501.92 | 6083.78 | 274.65 | .078 | 438.84 | 15328.04 | 6352.14 | 142.01 | -.09 | .3402 | 39.255 | .0000 | .000  |
| 718.204  | 503.60 | 501.76 | 6083.66 | 280.19 | .080 | 439.41 | 15366.10 | 6494.43 | 142.20 | -.09 | .3403 | 39.244 | .0000 | .000  |
| 726.191  | 503.55 | 501.67 | 6083.60 | 283.14 | .080 | 439.72 | 15386.29 | 6570.27 | 75.79  | -.05 | .3402 | 39.233 | .0000 | .000  |
| 741.191  | 503.44 | 501.51 | 6083.52 | 286.79 | .081 | 441.69 | 15525.53 | 6713.11 | 142.75 | -.09 | .3404 | 39.227 | .0000 | .000  |
| 746.336  | 503.40 | 501.45 | 6083.49 | 288.04 | .082 | 442.37 | 15572.81 | 6762.27 | 49.12  | -.03 | .3404 | 39.221 | .0000 | .000  |
| 746.346  | 503.39 | 501.29 | 6083.22 | 299.67 | .085 | 262.44 | 14972.90 | 6762.27 | .00    | -.00 | .3404 | 39.271 | .0000 | .000  |
| 761.346  | 503.35 | 501.29 | 6083.29 | 296.88 | .084 | 445.00 | 15114.69 | 6762.73 | .00    | -.46 | .3404 | 39.271 | .0000 | .000  |
| 776.346  | 503.30 | 501.26 | 6083.33 | 295.04 | .084 | 172.43 | 15257.02 | 6783.69 | 20.63  | -.33 | .3403 | 39.246 | .0000 | .000  |
| 791.346  | 503.21 | 501.15 | 6083.30 | 296.30 | .084 | 389.86 | 15399.89 | 6874.93 | 91.05  | -.19 | .3402 | 39.216 | .0000 | .000  |
| 794.631  | 503.18 | 501.11 | 6083.28 | 297.03 | .084 | 440.37 | 15433.16 | 6906.18 | 31.23  | -.03 | .3402 | 39.180 | .0000 | .000  |
| 809.631  | 503.08 | 500.94 | 6083.17 | 301.91 | .086 | 441.35 | 15502.81 | 7049.03 | 142.76 | -.09 | .3403 | 39.174 | .0000 | .000  |
| 824.631  | 502.97 | 500.77 | 6083.05 | 306.77 | .087 | 442.33 | 15571.06 | 7192.23 | 143.11 | -.10 | .3403 | 39.164 | .0000 | .000  |
| 839.631  | 502.86 | 500.59 | 6082.94 | 311.63 | .088 | 443.31 | 15640.28 | 7335.77 | 143.45 | -.10 | .3404 | 39.154 | .0000 | .000  |
| 854.781  | 502.76 | 500.41 | 6082.82 | 316.46 | .090 | 444.29 | 15707.87 | 7479.19 | 143.32 | -.10 | .3405 | 39.144 | .0000 | .000  |
| 859.781  | 502.66 | 500.23 | 6082.68 | 322.00 | .091 | 448.67 | 15742.38 | 7624.13 | 144.83 | -.11 | .3412 | 39.136 | .0000 | .000  |
| 864.781  | 502.57 | 500.07 | 6082.56 | 326.76 | .093 | 452.40 | 15770.21 | 7748.12 | 123.85 | -.14 | .3419 | 39.025 | .0000 | .000  |
| 899.781  | 502.56 | 500.07 | 6082.58 | 326.03 | .093 | .00    | 15805.53 | 7748.24 | .00    | -.13 | .3419 | 38.255 | .0000 | .000  |
| 914.781  | 502.55 | 500.07 | 6082.59 | 325.45 | .092 | .00    | 15834.18 | 7748.38 | .00    | -.14 | .3419 | 37.486 | .0000 | .000  |
| 929.781  | 502.54 | 500.07 | 6082.60 | 324.91 | .092 | .00    | 15860.07 | 7748.60 | .00    | -.21 | .3419 | 36.717 | .0000 | .000  |
| 944.781  | 502.53 | 500.07 | 6082.62 | 324.42 | .092 | .00    | 15885.62 | 7748.84 | .00    | -.24 | .3419 | 35.948 | .0000 | .000  |
| 959.781  | 502.53 | 500.07 | 6082.63 | 323.96 | .092 | .00    | 15908.41 | 7749.10 | .00    | -.26 | .3419 | 35.178 | .0000 | .000  |
| 974.781  | 502.52 | 500.07 | 6082.64 | 323.55 | .092 | .00    | 15929.25 | 7749.39 | .00    | -.29 | .3419 | 34.409 | .0000 | .000  |
| 989.781  | 502.51 | 500.07 | 6082.65 | 323.18 | .092 | .00    | 15948.14 | 7749.69 | .00    | -.31 | .3419 | 33.640 | .0000 | .000  |
| 1004.781 | 502.51 | 500.07 | 6082.66 | 322.85 | .092 | .00    | 15965.07 | 7750.02 | .00    | -.33 | .3419 | 32.871 | .0000 | .000  |
| 1019.781 | 502.50 | 500.07 | 6082.66 | 322.56 | .092 | .00    | 15980.06 | 7750.37 | .00    | -.35 | .3419 | 32.101 | .0000 | .000  |
| 1034.781 | 502.50 | 500.07 | 6082.67 | 322.32 | .091 | .00    | 15993.09 | 7750.74 | .00    | -.37 | .3419 | 31.332 | .0000 | .000  |
| 1040.791 | 502.50 | 500.07 | 6082.67 | 322.23 | .091 | .00    | 15997.77 | 7750.89 | .00    | -.15 | .3419 | 31.024 | .0000 | .000  |
| 1055.791 | 502.51 | 500.07 | 6082.66 | 322.81 | .092 | .00    | 15969.84 | 7751.28 | .00    | -.38 | .3419 | 30.483 | .0000 | .000  |
| 1070.791 | 502.52 | 500.07 | 6082.64 | 323.39 | .092 | .00    | 15941.80 | 7751.66 | .00    | -.38 | .3419 | 29.942 | .0000 | .000  |
| 1084.171 | 502.52 | 500.07 | 6082.63 | 323.92 | .092 | .00    | 15916.69 | 7752.00 | .00    | -.34 | .3419 | 29.459 | .0000 | .000  |
| AF1(A)   | 497.57 | 474.91 | 6046.11 | 997.36 | .284 | .....  | 15823.73 | 7753.16 | .00    | -.70 | .3409 | 29.460 | ..... | ..... |
| AF1(B)   | 497.57 | 497.57 | 6084.25 | -.03   | .000 | .....  | 10413.12 | .46     | .00    | -.46 | .3406 | 20.670 | ..... | ..... |

|          | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWOUT<br>LB/SEC | AB.<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|----------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|----------------|--------------|---------------------|-----------------|
| FOREWARD | 1.1676*02                            | 5.0554*02  | 5.0548*02 | 6.0866*03   | 4.7787*01   | 1.6460*04     | 0.0000          | 0.0000         | 0.0000       | 0.0000              | 1.1947*03       |
| AFT      | 1.1677*02                            | 5.0553*02  | 5.0547*02 | 6.0866*03   | 4.7788*01   | 1.6460*04     | 0.0000          | 0.0000         | 0.0000       | 0.0000              | 1.1947*03       |

GAS BUILDUP IN SLOT, DW/DT = -2.6625-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 4.2705*02 | 5.0490*02 | 5.0423*02 | 6.0856*03 | 1.6116*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.0010*03 |
| AFT      | 4.2706*02 | 5.0479*02 | 5.0412*02 | 6.0855*03 | 1.6119*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.0010*03 |

GAS BUILDUP IN SLOT, DW/DT = -2.6466-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 7.4634*02 | 5.0340*02 | 5.0245*02 | 6.0835*03 | 2.7380*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7623*03 |
| AFT      | 7.4635*02 | 5.0323*02 | 5.0229*02 | 6.0832*03 | 2.7388*02 | 1.6383*04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7623*03 |

GAS BUILDUP IN SLOT, DW/DT = -2.6537-04

|          |             |      |             |        |             |        |        |        |         |        |       |        |            |              |
|----------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------------|--------------|
| *PARTBN* | TIME=105.50 | IS=1 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 878.66 | AINCHI= | 869.78 | DELZ= | 8.881  | ALP=452.51 | ALPHI=449.91 |
| *PARTBN* | TIME=105.50 | IS=2 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 877.88 | AINCHI= | 869.78 | DELZ= | 8.095  | ALP=452.53 | ALPHI=450.16 |
| *PARTBN* | TIME=105.50 | IS=3 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 878.03 | AINCHI= | 869.78 | DELZ= | 8.249  | ALP=452.52 | ALPHI=450.11 |
| *PARTBN* | TIME=105.50 | IS=4 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 878.88 | AINCHI= | 869.78 | DELZ= | 9.096  | ALP=452.50 | ALPHI=449.84 |
| *PARTBN* | TIME=105.50 | IS=5 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 879.90 | AINCHI= | 869.78 | DELZ= | 10.118 | ALP=452.47 | ALPHI=449.52 |
| *PARTBN* | TIME=105.50 | IS=6 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 880.19 | AINCHI= | 869.78 | DELZ= | 10.409 | ALP=452.47 | ALPHI=449.42 |
| *PARTBN* | TIME=105.50 | IS=7 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 880.13 | AINCHI= | 869.78 | DELZ= | 10.352 | ALP=452.47 | ALPHI=449.44 |
| *PARTBN* | TIME=105.50 | IS=8 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 879.79 | AINCHI= | 869.78 | DELZ= | 10.009 | ALP=452.48 | ALPHI=449.55 |
| *PARTBN* | TIME=105.50 | IS=1 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 878.66 | AINCHI= | 869.78 | DELZ= | 8.881  | ALP=452.51 | ALPHI=449.91 |
| *PARTBN* | TIME=105.50 | IS=2 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 877.88 | AINCHI= | 869.78 | DELZ= | 8.095  | ALP=452.53 | ALPHI=450.16 |
| *PARTBN* | TIME=105.50 | IS=3 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 878.03 | AINCHI= | 869.78 | DELZ= | 8.249  | ALP=452.52 | ALPHI=450.11 |
| *PARTBN* | TIME=105.50 | IS=4 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 878.88 | AINCHI= | 869.78 | DELZ= | 9.096  | ALP=452.50 | ALPHI=449.84 |
| *PARTBN* | TIME=105.50 | IS=5 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 879.90 | AINCHI= | 869.78 | DELZ= | 10.118 | ALP=452.47 | ALPHI=449.52 |
| *PARTBN* | TIME=105.50 | IS=6 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 880.19 | AINCHI= | 869.78 | DELZ= | 10.409 | ALP=452.47 | ALPHI=449.42 |
| *PARTBN* | TIME=105.50 | IS=7 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 880.13 | AINCHI= | 869.78 | DELZ= | 10.352 | ALP=452.47 | ALPHI=449.44 |
| *PARTBN* | TIME=105.50 | IS=8 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 879.79 | AINCHI= | 869.78 | DELZ= | 10.009 | ALP=452.48 | ALPHI=449.55 |
| *PARTBN* | TIME=106.00 | IS=1 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 875.38 | AINCHI= | 869.78 | DELZ= | 5.598  | ALP=452.59 | ALPHI=450.98 |
| *PARTBN* | TIME=106.00 | IS=2 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 874.59 | AINCHI= | 869.78 | DELZ= | 4.806  | ALP=452.61 | ALPHI=451.23 |
| *PARTBN* | TIME=106.00 | IS=3 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 874.74 | AINCHI= | 869.78 | DELZ= | 4.960  | ALP=452.61 | ALPHI=451.18 |
| *PARTBN* | TIME=106.00 | IS=4 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 875.59 | AINCHI= | 869.78 | DELZ= | 5.814  | ALP=452.59 | ALPHI=450.91 |
| *PARTBN* | TIME=106.00 | IS=5 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.62 | AINCHI= | 869.78 | DELZ= | 6.839  | ALP=452.56 | ALPHI=450.58 |
| *PARTBN* | TIME=106.00 | IS=6 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.91 | AINCHI= | 869.78 | DELZ= | 7.132  | ALP=452.55 | ALPHI=450.49 |
| *PARTBN* | TIME=106.00 | IS=7 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.86 | AINCHI= | 869.78 | DELZ= | 7.075  | ALP=452.55 | ALPHI=450.51 |
| *PARTBN* | TIME=106.00 | IS=8 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.51 | AINCHI= | 869.78 | DELZ= | 6.730  | ALP=452.56 | ALPHI=450.62 |
| *PARTBN* | TIME=106.00 | IS=1 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 875.38 | AINCHI= | 869.78 | DELZ= | 5.598  | ALP=452.59 | ALPHI=450.98 |
| *PARTBN* | TIME=106.00 | IS=2 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 874.59 | AINCHI= | 869.78 | DELZ= | 4.806  | ALP=452.61 | ALPHI=451.23 |
| *PARTBN* | TIME=106.00 | IS=3 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 874.74 | AINCHI= | 869.78 | DELZ= | 4.960  | ALP=452.61 | ALPHI=451.18 |
| *PARTBN* | TIME=106.00 | IS=4 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 875.59 | AINCHI= | 869.78 | DELZ= | 5.814  | ALP=452.59 | ALPHI=450.91 |
| *PARTBN* | TIME=106.00 | IS=5 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.62 | AINCHI= | 869.78 | DELZ= | 6.839  | ALP=452.56 | ALPHI=450.58 |
| *PARTBN* | TIME=106.00 | IS=6 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.91 | AINCHI= | 869.78 | DELZ= | 7.132  | ALP=452.55 | ALPHI=450.49 |
| *PARTBN* | TIME=106.00 | IS=7 | ZCALC( 67)= | 884.78 | ZCALC( 66)= | 869.78 | AINCW= | 876.86 | AINCHI= | 869.78 | DELZ= | 7.075  | ALP=452.55 | ALPHI=450.51 |

• PARTIAL TIME=106.00 IS=8 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 876.51 AINCHI= 869.78 DELZ= 6.730 ALP=52.56 ALPHI=450.62

DATE 071076

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IGNITION TIME, TIME (S)

106.00000

| PARAMETER DESCRIPTION (UNITS)                | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|----------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                     |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)               | FTDEL                | 8790267.6     | 1976130.8    |
| TOTAL VACUUM THRUST (N,LBF)                  | FTVAC                | 8803125.4     | 1979021.3    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)        | FI                   | 66130.930     | 14866.024    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)          | SRMDTI               | .11648790*10  | .26187972*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)          | TISP                 | 255.75700     | 255.75700    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)             | SRMVTI               | .12148226*10  | .27310298*09 |
| THRUST COEFFICIENT                           | CF                   | 1.6279614     | 1.6279614    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/75T) | WDOT                 | 3474.3590     | 7659.6506    |
| FLOWRATE INTEGRAL (KG,LBM)                   | SWDOTN               | 478284.78     | 1054437.5    |
| INERT MASS FLOWRATE (KG/S,LBM/S)             | MIF                  | 35.491990     | 78.246445    |
| INERT MASS REMAINING (KG,LBM)                | MIR                  | 299.86034     | 661.07890    |
| TOTAL BURN AREA (M**2,IN**2)                 | ABTOT                | 225.82011     | 350021.87    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)         | VF                   | 17.374329     | 1060246.6    |
| PROPELLANT MASS REMAINING (KG,LBM)           | WF                   | 27325.302     | 60241.980    |
| TOTAL GAS MASS (KG,LBM)                      | WGTOT                | 1178.8608     | 2598.9433    |
| RATIO OF SPECIFIC HEATS                      | GAMA                 | 1.1596243     | 1.1596243    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)   | AMW                  | 12.822648     | 28.269099    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)   | CSTAR                | 1557.5683     | 5110.1323    |
| MAXIMUM CHAMBER MACH NUMBER                  | AMPN                 | .92120588-01  | .92120588-01 |
| <b>HEAD END PARAMETERS:</b>                  |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)            | PH                   | .34421196*09  | 499.23724    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)     | SPHDT                | .50594180*11  | 73380.654    |
| BURN AREA (M**2,IN**2)                       | AHH                  | 2.8644566     | 4439.9166    |
| BURN RATE (M/S,IN/S)                         | RBZ(1)               | .86212026-02  | .33941744    |
| DISTANCE BURNED (M,IN)                       | TAUZ(1)              | 1.0169251     | 40.036421    |
| PROPELLANT VOLUME (M**3,IN**3)               | VFH                  | .38546437     | 23522.479    |
| GAS VOLUME (M**3,IN**3)                      | VPH                  | 54.718368     | 3339119.7    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)         | PRNT(1,3)            | 3380.4238     | 6084.7628    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>       |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)                | ABCYL                | 222.95566     | 345581.96    |
| SEGMENT FACE BURN AREA (M**2,IN**2)          | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)               | VFCYL                | 16.986898     | 1036604.1    |
| GAS VOLUME (M**3,IN**3)                      | VP                   | 271.09918     | 16543487.    |
| <b>AFT END PARAMETERS:</b>                   |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)    | PON                  | .33873849*09  | 491.29865    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)     | SPONDT               | .48222467*11  | 69940.779    |
| BURN AREA (M**2,IN**2)                       | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)             | RBZ(IN+1,1)          | .86201783-02  | .33937710    |
| BURN RATE, REGION B (M/S,IN/SEC)             | RBZ(IN+2,1)          | .86126021-02  | .33907883    |
| DISTANCE BURNED, REGION A (M,IN)             | TAUZ(IN+1,1)         | .74628400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)             | TAUZ(IN+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)               | VFN                  | .19602722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                      | VPN                  | 17.647463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)       | PRNT(IN+2,3)         | 3379.0564     | 6082.3016    |
| PORT AREA, NOZ ENT (M**2,IN**2)              | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                    |                      |               |              |
| THROAT AREA (M**2,IN**2)                     | AT                   | 1.5963504     | 2474.3481    |
| EXPANSION RATIO                              | EPR                  | 6.7331800     | 6.7331800    |
| PRESSURE RATIO                               | PEPO                 | .23437978-01  | .23437978-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>             |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT            | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                | ANLUPS               | 2.0000000     | 2.0000000    |

### ATTACHMENT DIVIDING PLANE DATA:

| MASS<br>AUCUTION<br>REGIONS | PO     | P      | T       | U      | M    | LP      | AP       | WDOT    | DWDOT  | DW/DI  | IN/SEC | IN.    | IN/SEC | IN.    | IN/SEC | IN.    |
|-----------------------------|--------|--------|---------|--------|------|---------|----------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES  | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.    | IN/SEC | IN.    |
| FORE                        | 499.24 | 499.24 | 6084.76 | 4.52   | .001 | 431.88  | 14841.62 | 100.65  | 95.55  | -5.10  | .3392  | 40.036 | .3392  | 40.036 | .3392  | 40.036 |
| 15.000                      | 499.24 | 499.24 | 6084.76 | 10.77  | .003 | 432.15  | 14860.35 | 2405.18 | 139.46 | -.08   | .3392  | 39.992 | .3392  | 39.992 | .3392  | 39.992 |
| 30.000                      | 499.23 | 499.23 | 6084.75 | 17.01  | .005 | 432.42  | 14879.05 | 379.81  | 139.55 | -.08   | .3392  | 39.988 | .3392  | 39.988 | .3392  | 39.988 |
| 45.000                      | 499.23 | 499.23 | 6084.74 | 23.24  | .007 | 432.68  | 14897.71 | 519.52  | 139.63 | -.08   | .3392  | 39.983 | .3392  | 39.983 | .3392  | 39.983 |
| 60.000                      | 499.22 | 499.22 | 6084.73 | 29.46  | .008 | 432.95  | 14916.33 | 659.32  | 139.72 | -.08   | .3392  | 39.978 | .3392  | 39.978 | .3392  | 39.978 |
| 75.000                      | 499.22 | 499.22 | 6084.71 | 35.67  | .010 | 433.22  | 14934.91 | 799.21  | 139.81 | -.08   | .3392  | 39.973 | .3392  | 39.973 | .3392  | 39.973 |
| 90.000                      | 499.22 | 499.22 | 6084.69 | 41.87  | .012 | 433.49  | 14953.45 | 939.19  | 139.90 | -.08   | .3392  | 39.968 | .3392  | 39.968 | .3392  | 39.968 |
| 9J.000                      | 499.17 | 499.17 | 6084.67 | 48.05  | .014 | 433.76  | 14971.96 | 1079.26 | 139.99 | -.08   | .3392  | 39.963 | .3392  | 39.963 | .3392  | 39.963 |
| 105.000                     | 499.14 | 499.14 | 6084.67 | 52.90  | .015 | 433.96  | 14986.44 | 1189.15 | 109.82 | -.06   | .3392  | 39.957 | .3392  | 39.957 | .3392  | 39.957 |
| 116.761                     | 499.18 | 499.18 | 6084.65 |        |      |         |          |         |        |        |        |        |        |        |        |        |
| 116.771                     | 499.11 | 499.11 | 6084.63 | 57.40  | .016 | -109.91 | 13810.64 | 1189.15 | .00    | -.00   | .3392  | 39.958 | .3392  | 39.958 | .3392  | 39.958 |
| 131.771                     | 499.10 | 499.10 | 6084.64 | 55.56  | .016 | 190.12  | 14427.50 | 1202.39 | 12.94  | -.30   | .3392  | 39.951 | .3392  | 39.951 | .3392  | 39.951 |
| 145.919                     | 499.08 | 499.08 | 6084.61 | 63.36  | .016 | 433.09  | 14927.80 | 1283.98 | 81.47  | -.12   | .3392  | 39.945 | .3392  | 39.945 | .3392  | 39.945 |
| 155.919                     | 499.05 | 499.05 | 6084.61 | 69.35  | .018 | 434.02  | 14984.92 | 1424.03 | 139.97 | -.08   | .3392  | 39.939 | .3392  | 39.939 | .3392  | 39.939 |
| 173.919                     | 499.03 | 499.03 | 6084.58 | 75.30  | .020 | 434.95  | 15041.76 | 1564.39 | 140.28 | -.08   | .3392  | 39.933 | .3392  | 39.933 | .3392  | 39.933 |
| 183.919                     | 499.07 | 499.07 | 6084.54 | 81.23  | .021 | 435.08  | 15098.31 | 1705.05 | 140.59 | -.08   | .3392  | 39.927 | .3392  | 39.927 | .3392  | 39.927 |
| 203.919                     | 499.06 | 499.06 | 6084.51 | 87.14  | .023 | 436.81  | 15154.59 | 1846.03 | 140.89 | -.08   | .3392  | 39.920 | .3392  | 39.920 | .3392  | 39.920 |
| 215.919                     | 499.08 | 499.08 | 6084.47 | 93.01  | .025 | 437.73  | 15210.59 | 1987.31 | 141.20 | -.08   | .3392  | 39.914 | .3392  | 39.914 | .3392  | 39.914 |
| 233.919                     | 499.06 | 499.06 | 6084.43 | 98.86  | .026 | 438.66  | 15266.31 | 2128.90 | 141.51 | -.08   | .3392  | 39.907 | .3392  | 39.907 | .3392  | 39.907 |
| 249.919                     | 499.03 | 499.03 | 6084.38 | 104.69 | .028 | 439.59  | 15321.74 | 2270.80 | 141.82 | -.08   | .3392  | 39.901 | .3392  | 39.901 | .3392  | 39.901 |
| 263.919                     | 499.01 | 499.01 | 6084.33 | 110.49 | .030 | 440.52  | 15376.93 | 2413.01 | 142.12 | -.08   | .3392  | 39.894 | .3392  | 39.894 | .3392  | 39.894 |
| 278.919                     | 499.06 | 499.06 | 6084.29 | 116.27 | .031 | 441.45  | 15431.77 | 2555.53 | 142.43 | -.06   | .3392  | 39.887 | .3392  | 39.887 | .3392  | 39.887 |
| 293.919                     | 498.91 | 498.91 | 6084.23 | 122.03 | .033 | 442.37  | 15486.37 | 2698.37 | 142.75 | -.09   | .3392  | 39.880 | .3392  | 39.880 | .3392  | 39.880 |
| 308.919                     | 498.88 | 498.88 | 6084.18 | 127.76 | .035 | 443.30  | 15540.69 | 2841.52 | 143.07 | -.09   | .3392  | 39.873 | .3392  | 39.873 | .3392  | 39.873 |
| 323.919                     | 498.84 | 498.84 | 6084.12 | 133.47 | .036 | 444.23  | 15594.72 | 2985.00 | 143.39 | -.09   | .3392  | 39.866 | .3392  | 39.866 | .3392  | 39.866 |
| 338.919                     | 498.80 | 498.80 | 6084.07 | 139.16 | .038 | 445.16  | 15648.48 | 3128.79 | 143.71 | -.09   | .3392  | 39.859 | .3392  | 39.859 | .3392  | 39.859 |
| 353.919                     | 498.76 | 498.76 | 6084.01 | 144.84 | .039 | 446.09  | 15701.95 | 3272.90 | 144.02 | -.09   | .3392  | 39.852 | .3392  | 39.852 | .3392  | 39.852 |
| 368.919                     | 498.72 | 498.72 | 6083.94 | 150.49 | .041 | 447.01  | 15755.15 | 3417.33 | 144.34 | -.09   | .3392  | 39.844 | .3392  | 39.844 | .3392  | 39.844 |
| 383.919                     | 498.68 | 498.68 | 6083.88 | 156.12 | .043 | 447.94  | 15808.06 | 3562.08 | 144.66 | -.09   | .3392  | 39.837 | .3392  | 39.837 | .3392  | 39.837 |
| 398.919                     | 498.63 | 498.63 | 6083.81 | 161.77 | .044 | 448.87  | 15860.69 | 3707.14 | 144.98 | -.09   | .3392  | 39.829 | .3392  | 39.829 | .3392  | 39.829 |
| 403.048                     | 498.62 | 498.62 | 6083.79 | 164.03 | .045 | 449.13  | 15875.82 | 3747.13 | 144.96 | -.09   | .3392  | 39.828 | .3392  | 39.828 | .3392  | 39.828 |
| 418.048                     | 498.58 | 498.58 | 6083.71 | 167.85 | .047 | 449.27  | 15882.86 | 3892.18 | 66.76  | -.05   | .3401  | 39.821 | .3401  | 39.821 | .3401  | 39.821 |
| 427.051                     | 498.55 | 498.55 | 6083.66 |        | .048 | 446.15  | 15839.65 | 3978.99 |        |        |        |        |        |        |        |        |
| 427.061                     | 498.54 | 498.54 | 6083.44 | 183.77 | .052 | -313.12 | 14470.90 | 3978.99 | .00    | -.00   | .3400  | 39.847 | .3400  | 39.847 | .3400  | 39.847 |
| 442.061                     | 498.53 | 498.53 | 6083.47 | 181.94 | .052 | -3.97   | 14617.87 | 3979.44 | .00    | -.45   | .3393  | 39.845 | .3393  | 39.845 | .3393  | 39.845 |
| 457.061                     | 498.49 | 498.49 | 6083.46 | 182.26 | .052 | 305.19  | 14772.85 | 4028.28 | 48.58  | -.26   | .3388  | 39.817 | .3388  | 39.817 | .3388  | 39.817 |
| 463.204                     | 498.47 | 498.47 | 6083.44 | 189.44 | .054 | 431.80  | 14838.63 | 4077.00 | 48.67  | -.26   | .3388  | 39.776 | .3388  | 39.776 | .3388  | 39.776 |
| 478.204                     | 498.41 | 498.41 | 6083.36 | 195.27 | .054 | 432.37  | 14866.07 | 4216.41 | 139.33 | -.08   | .3388  | 39.755 | .3388  | 39.755 | .3388  | 39.755 |
| 493.204                     | 498.35 | 498.35 | 6083.27 | 200.97 | .055 | 432.94  | 14921.31 | 4356.01 | 139.52 | -.08   | .3388  | 39.745 | .3388  | 39.745 | .3388  | 39.745 |
| 508.204                     | 498.29 | 498.29 | 6083.18 | 206.71 | .057 | 433.52  | 14972.35 | 4495.80 | 139.71 | -.08   | .3388  | 39.735 | .3388  | 39.735 | .3388  | 39.735 |
| 523.204                     | 498.23 | 498.23 | 6083.09 | 212.43 | .059 | 434.09  | 15023.19 | 4635.77 | 139.89 | -.08   | .3388  | 39.724 | .3388  | 39.724 | .3388  | 39.724 |
| 538.204                     | 498.16 | 498.16 | 6083.00 | 218.14 | .060 | 434.67  | 15074.83 | 4775.93 | 140.08 | -.08   | .3388  | 39.714 | .3388  | 39.714 | .3388  | 39.714 |
| 553.204                     | 498.09 | 498.09 | 6082.90 | 223.83 | .062 | 435.24  | 15126.45 | 4916.27 | 140.26 | -.08   | .3388  | 39.704 | .3388  | 39.704 | .3388  | 39.704 |
| 568.204                     | 498.03 | 498.03 | 6082.80 | 229.51 | .064 | 435.81  | 15178.06 | 5056.86 | 140.45 | -.08   | .3388  | 39.693 | .3388  | 39.693 | .3388  | 39.693 |
| 583.204                     | 497.96 | 497.96 | 6082.70 | 235.17 | .065 | 436.39  | 15229.54 | 5197.52 | 140.63 | -.08   | .3388  | 39.683 | .3388  | 39.683 | .3388  | 39.683 |
| 598.204                     | 497.88 | 497.88 | 6082.60 | 240.82 | .067 | 436.96  | 15280.43 | 5338.42 | 140.82 | -.08   | .3388  | 39.672 | .3388  | 39.672 | .3388  | 39.672 |
| 613.204                     | 497.81 | 497.81 | 6082.49 | 246.51 | .068 | 437.53  | 15331.31 | 5479.50 | 141.02 | -.08   | .3388  | 39.661 | .3388  | 39.661 | .3388  | 39.661 |

|          |        |        |         |        |      |        |          |         |        |      |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|------|-------|--------|-------|------|
| 628-204  | 497.73 | 496.32 | 6082.39 | 246.46 | .070 | 438.11 | 15203.44 | 5620.77 | 141.18 | -.08 | .3388 | 39.650 | .0000 | .000 |
| 643-204  | 497.66 | 496.18 | 6082.28 | 252.38 | .072 | 438.60 | 15322.68 | 5762.23 | 141.37 | -.09 | .3388 | 39.639 | .0000 | .000 |
| 658-204  | 497.58 | 496.04 | 6082.17 | 257.69 | .073 | 439.25 | 15361.71 | 5903.88 | 141.57 | -.09 | .3389 | 39.628 | .0000 | .000 |
| 673-204  | 497.49 | 495.99 | 6082.05 | 263.29 | .075 | 439.83 | 15400.55 | 6045.73 | 141.76 | -.09 | .3389 | 39.617 | .0000 | .000 |
| 688-204  | 497.41 | 495.73 | 6081.94 | 268.88 | .076 | 440.40 | 15439.18 | 6187.77 | 141.96 | -.09 | .3389 | 39.606 | .0000 | .000 |
| 703-204  | 497.33 | 495.58 | 6081.82 | 274.46 | .078 | 440.98 | 15477.61 | 6330.01 | 142.15 | -.09 | .3389 | 39.595 | .0000 | .000 |
| 718-204  | 497.24 | 495.42 | 6081.76 | 280.33 | .079 | 441.55 | 15515.84 | 6472.44 | 142.34 | -.09 | .3389 | 39.584 | .0000 | .000 |
| 733-191  | 497.19 | 495.34 | 6081.63 | 282.99 | .080 | 441.85 | 15536.12 | 6548.35 | 142.53 | -.05 | .3389 | 39.573 | .0000 | .000 |
| 741-191  | 497.08 | 495.17 | 6081.55 | 286.68 | .081 | 443.83 | 15676.09 | 6691.33 | 142.89 | -.09 | .3391 | 39.567 | .0000 | .000 |
| 746-336  | 497.04 | 495.12 | 6081.52 | 287.94 | .082 | 444.51 | 15723.62 | 6740.53 | 49.17  | -.03 | .3391 | 39.561 | .0000 | .000 |
| 746-346  | 497.03 | 494.88 | 6081.14 | 304.44 | .086 | 447.82 | 14877.63 | 6740.53 | .00    | -.00 | .3391 | 39.611 | .0000 | .000 |
| 761-346  | 496.97 | 494.68 | 6081.24 | 300.08 | .085 | 448.79 | 15095.00 | 6741.00 | .00    | -.47 | .3391 | 39.611 | .0000 | .000 |
| 776-346  | 496.90 | 494.87 | 6081.32 | 296.48 | .084 | 460.25 | 15313.18 | 6756.09 | 14.75  | -.33 | .3390 | 39.586 | .0000 | .000 |
| 791-346  | 496.79 | 494.76 | 6081.33 | 296.21 | .084 | 389.28 | 15532.18 | 6844.92 | 88.63  | -.19 | .3389 | 39.556 | .0000 | .000 |
| 794-631  | 496.76 | 494.72 | 6081.32 | 296.61 | .084 | 442.50 | 15583.18 | 6876.11 | 31.16  | -.03 | .3389 | 39.520 | .0000 | .000 |
| 809-631  | 496.66 | 494.55 | 6081.21 | 301.52 | .086 | 443.48 | 15653.22 | 7019.09 | 142.89 | -.09 | .3389 | 39.514 | .0000 | .000 |
| 824-631  | 496.55 | 494.38 | 6081.09 | 306.42 | .087 | 444.46 | 15722.63 | 7162.42 | 143.24 | -.09 | .3390 | 39.504 | .0000 | .000 |
| 839-631  | 496.45 | 494.20 | 6080.97 | 311.31 | .088 | 445.45 | 15791.43 | 7306.12 | 143.61 | -.10 | .3392 | 39.494 | .0000 | .000 |
| 854-781  | 496.34 | 494.03 | 6080.85 | 316.18 | .090 | 446.43 | 15859.38 | 7449.71 | 143.49 | -.10 | .3393 | 39.484 | .0000 | .000 |
| 869-781  | 496.24 | 493.84 | 6080.71 | 322.05 | .091 | 450.81 | 15879.02 | 7594.85 | 145.02 | -.11 | .3400 | 39.476 | .0000 | .000 |
| 884-781  | 496.20 | 493.77 | 6080.65 | 324.47 | .092 | 452.58 | 15886.79 | 7654.61 | 59.62  | -.14 | .3404 | 39.025 | .0000 | .000 |
| 899-781  | 496.19 | 493.77 | 6080.66 | 323.92 | .092 | .00    | 15913.84 | 7654.77 | .00    | -.16 | .3404 | 38.255 | .0000 | .000 |
| 914-781  | 496.19 | 493.77 | 6080.67 | 323.62 | .092 | .00    | 15929.02 | 7654.90 | .00    | -.19 | .3404 | 37.486 | .0000 | .000 |
| 929-781  | 496.19 | 493.77 | 6080.67 | 323.36 | .092 | .00    | 15942.71 | 7655.17 | .00    | -.21 | .3404 | 36.717 | .0000 | .000 |
| 944-781  | 496.18 | 493.77 | 6080.68 | 323.12 | .092 | .00    | 15954.92 | 7655.41 | .00    | -.24 | .3404 | 35.948 | .0000 | .000 |
| 959-781  | 496.18 | 493.77 | 6080.68 | 322.91 | .092 | .00    | 15965.63 | 7655.67 | .00    | -.26 | .3404 | 35.178 | .0000 | .000 |
| 974-781  | 496.18 | 493.77 | 6080.69 | 322.74 | .092 | .00    | 15974.86 | 7655.95 | .00    | -.28 | .3404 | 34.409 | .0000 | .000 |
| 989-781  | 496.17 | 493.77 | 6080.69 | 322.60 | .092 | .00    | 15982.59 | 7656.25 | .00    | -.30 | .3404 | 33.640 | .0000 | .000 |
| 1004-781 | 496.17 | 493.77 | 6080.70 | 322.48 | .092 | .00    | 15988.84 | 7656.57 | .00    | -.32 | .3404 | 32.871 | .0000 | .000 |
| 1019-781 | 496.17 | 493.77 | 6080.70 | 322.40 | .092 | .00    | 15993.60 | 7656.91 | .00    | -.34 | .3404 | 32.101 | .0000 | .000 |
| 1034-781 | 496.17 | 493.77 | 6080.70 | 322.35 | .092 | .00    | 15998.88 | 7657.20 | .00    | -.36 | .3404 | 31.332 | .0000 | .000 |
| 1049-781 | 496.17 | 493.77 | 6080.70 | 322.34 | .092 | .00    | 15997.77 | 7657.42 | .00    | -.15 | .3404 | 31.024 | .0000 | .000 |
| 1064-781 | 496.18 | 493.77 | 6080.68 | 322.92 | .092 | .00    | 15969.84 | 7657.80 | .00    | -.38 | .3404 | 30.463 | .0000 | .000 |
| 1079-781 | 496.19 | 493.77 | 6080.67 | 323.50 | .092 | .00    | 15941.80 | 7658.16 | .00    | -.38 | .3404 | 29.942 | .0000 | .000 |
| 1094-171 | 496.20 | 493.77 | 6080.66 | 324.22 | .092 | .00    | 15918.69 | 7658.51 | .00    | -.33 | .3404 | 29.459 | .0000 | .000 |
| AFT(A)   | 491.30 | 468.91 | 6044.13 | 997.75 | .284 | .0000  | 15823.73 | 7659.65 | .00    | -.69 | .3394 | 29.460 | .0000 | .000 |
| AFT(B)   | 491.30 | 491.30 | 6082.30 | .00    | .000 | .0000  | 15413.12 | .45     | .00    | -.45 | .3391 | 20.670 | .0000 | .000 |

| SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD                              | 1.1676+02  | 4.9918+02 | 4.9912+02   | 6.0847+03   | 4.8160+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 1.1391+03       |
| AFT                                  | 1.1677+02  | 4.9917+02 | 4.9911+02   | 6.0846+03   | 4.8161+01     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 1.1391+03       |

GAS BUILDUP IN SLOT, DW/DT = -2.6074-04

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 4.9855+02 | 4.9789+02 | 6.0837+03 | 1.6228+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 3.9790+03 |
| AFT     | 4.2706+02 | 4.9841+02 | 4.9776+02 | 6.0834+03 | 1.6232+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 3.9790+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.5922-04

|         |           |           |           |           |           |           |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 4.9704+02 | 4.9512+02 | 6.0815+03 | 2.7635+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.7405+03 |
| AFT     | 7.4635+02 | 4.9681+02 | 4.9488+02 | 6.0811+03 | 2.7647+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.7405+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.6008-04

|                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------|
| *PARTBN* TIME=106.50 IS=1 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 872.10 AINCHI= 869.78 DELZ= 2.319 ALP=452.68 ALPHI=452.05 |
| *PARTBN* TIME=106.50 IS=2 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 871.30 AINCHI= 869.78 DELZ= 1.521 ALP=452.70 ALPHI=452.31 |
| *PARTBN* TIME=106.50 IS=3 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 871.46 AINCHI= 869.78 DELZ= 1.674 ALP=452.70 ALPHI=452.26 |
| *PARTBN* TIME=106.50 IS=4 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 872.32 AINCHI= 869.78 DELZ= 2.536 ALP=452.67 ALPHI=451.98 |
| *PARTBN* TIME=106.50 IS=5 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.35 AINCHI= 869.78 DELZ= 3.567 ALP=452.65 ALPHI=451.65 |
| *PARTBN* TIME=106.50 IS=6 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.64 AINCHI= 869.78 DELZ= 3.861 ALP=452.64 ALPHI=451.55 |
| *PARTBN* TIME=106.50 IS=7 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.58 AINCHI= 869.78 DELZ= 3.804 ALP=452.64 ALPHI=451.57 |
| *PARTBN* TIME=106.50 IS=8 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.24 AINCHI= 869.78 DELZ= 3.457 ALP=452.65 ALPHI=451.68 |
| *PARTBN* TIME=106.50 IS=1 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 872.10 AINCHI= 869.78 DELZ= 2.319 ALP=452.68 ALPHI=452.05 |
| *PARTBN* TIME=106.50 IS=2 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 871.30 AINCHI= 869.78 DELZ= 1.521 ALP=452.70 ALPHI=452.31 |
| *PARTBN* TIME=106.50 IS=3 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 871.46 AINCHI= 869.78 DELZ= 1.674 ALP=452.70 ALPHI=452.26 |
| *PARTBN* TIME=106.50 IS=4 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 872.32 AINCHI= 869.78 DELZ= 2.536 ALP=452.67 ALPHI=451.98 |
| *PARTBN* TIME=106.50 IS=5 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.35 AINCHI= 869.78 DELZ= 3.567 ALP=452.65 ALPHI=451.65 |
| *PARTBN* TIME=106.50 IS=6 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.64 AINCHI= 869.78 DELZ= 3.861 ALP=452.64 ALPHI=451.55 |
| *PARTBN* TIME=106.50 IS=7 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.58 AINCHI= 869.78 DELZ= 3.804 ALP=452.64 ALPHI=451.57 |
| *PARTBN* TIME=106.50 IS=8 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 873.24 AINCHI= 869.78 DELZ= 3.457 ALP=452.65 ALPHI=451.68 |
| WEB BURNOUT INCREMENT LOCATION = 869.7810 SECTOR NO. 1 TAU = 39.7938 TAUWDP = 39.7938 TIME = 106.50                              |
| WEB BURNOUT INCREMENT LOCATION = 869.7810 SECTOR NO. 2 TAU = 39.7938 TAUWDP = 39.7938 TIME = 106.50                              |
| WEB BURNOUT INCREMENT LOCATION = 869.7810 SECTOR NO. 3 TAU = 39.7938 TAUWDP = 39.7938 TIME = 106.50                              |
| WEB BURNOUT INCREMENT LOCATION = 869.7810 SECTOR NO. 4 TAU = 39.7938 TAUWDP = 39.7938 TIME = 106.50                              |
| *PARTBN* TIME=107.00 IS=1 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 868.82 AINCHI= 854.78 DELZ=14.035 ALP=452.77 ALPHI=448.72 |
| *PARTBN* TIME=107.00 IS=2 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 868.00 AINCHI= 854.78 DELZ=13.218 ALP=452.79 ALPHI=448.97 |
| *PARTBN* TIME=107.00 IS=3 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 868.15 AINCHI= 854.78 DELZ=13.374 ALP=452.78 ALPHI=448.92 |
| *PARTBN* TIME=107.00 IS=4 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 869.04 AINCHI= 854.78 DELZ=14.257 ALP=452.76 ALPHI=448.65 |
| *PARTBN* TIME=107.00 IS=5 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 869.98 AINCHI= 854.78 DELZ=15.198 ALP=452.74 ALPHI=448.37 |
| *PARTBN* TIME=107.00 IS=6 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 870.08 AINCHI= 869.78 DELZ= .300 ALP=452.73 ALPHI=452.71  |
| *PARTBN* TIME=107.00 IS=7 ZCALC( 67)= 884.78 ZCALC( 66)= 869.78 AINCW= 870.38 AINCHI= 869.78 DELZ= .597 ALP=452.73 ALPHI=452.61  |
| *PARTBN* TIME=107.00 IS=1 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 868.82 AINCHI= 854.78 DELZ=14.035 ALP=452.77 ALPHI=448.72 |
| *PARTBN* TIME=107.00 IS=2 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 868.00 AINCHI= 854.78 DELZ=13.218 ALP=452.79 ALPHI=448.97 |



DATE 071076

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\*PARTBN\* TIME=107.00 IS=4 ZCALCI 661= 869.78 ZCALCI 651= 854.78 AINCW= 869.04 AINCHI= 854.78 DELZ=14.257 ALP=452.76 ALPHI=448.65  
\*PARTBN\* TIME=107.00 IS=8 ZCALCI 661= 869.78 ZCALCI 651= 854.78 AINCW= 869.98 AINCHI= 854.78 DELZ=15.198 ALP=452.74 ALPHI=448.37  
\*PARTBN\* TIME=107.00 IS=5 ZCALCI 671= 884.78 ZCALCI 661= 869.78 AINCW= 870.08 AINCHI= 869.78 DELZ= .300 ALP=452.73 ALPHI=452.71  
\*PARTBN\* TIME=107.00 IS=6 ZCALCI 671= 884.78 ZCALCI 661= 869.78 AINCW= 870.38 AINCHI= 869.78 DELZ= .597 ALP=452.73 ALPHI=452.61  
\*PARTBN\* TIME=107.00 IS=7 ZCALCI 671= 884.78 ZCALCI 661= 869.78 AINCW= 870.32 AINCHI= 869.78 DELZ= .538 ALP=452.73 ALPHI=452.63



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| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|-----------------------------------------------------------------|----------------------|---------------|---------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 8690752.0     | 1953758.8     |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 8702590.7     | 1956420.2     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 66513.623     | 14952.857     |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMUT                | 11736393.10   | 26384462.09   |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 255.72176     | 255.72176     |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVT                | 12235752.10   | 27507065.09   |
| THRUST COEFFICIENT                                              | CF                   | 1.6281121     | 1.6281121     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 3434.5482     | 7571.8827     |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 481739.12     | 1062053.0     |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 35.697379     | 78.699249     |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 264.21547     | 582.49540     |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | AUTOT                | 223.69126     | 346722.14     |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 15.300735     | 933708.16     |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 23878.017     | 52642.017     |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1174.6125     | 2589.5773     |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1596186     | 1.1596186     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.821233     | 28.265980     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1557.4618     | 5109.7829     |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | 0.92032067-01 | 0.92032067-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |               |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | 0.34011474+09 | 493.29473     |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | 0.50936333+11 | 73876.906     |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 2.6929327     | 4174.0541     |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | 0.85879287-02 | 0.33810743    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | 1.0255377     | 40.375499     |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 0.36157048    | 22064.384     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.742261     | 3340577.7     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3379.4004     | 6082.9207     |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |               |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 220.99833     | 342548.69     |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | 0.00000000    | 0.00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 14.937199     | 911523.80     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 273.90199     | 16714525.     |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | 0.33468995+09 | 485.42673     |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | 0.48559175+11 | 70429.129     |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 0.00000000    | 0.00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | 0.85839855-02 | 0.33795219    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | 0.85764352-02 | 0.33765493    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | 0.74828400    | 29.460000     |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | 0.52501800    | 20.670000     |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | 0.19662722-02 | 119.98929     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.047463     | 1040300.0     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3378.0452     | 6080.4814     |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733     |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |               |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5970613     | 2475.4560     |
| EXPANSION RATIO                                                 | EPR                  | 6.7301831     | 6.7301831     |
| PRESSURE RATIO                                                  | PEPO                 | 0.23452019-01 | 0.23452019-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | 0.37810250-01 | 0.37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLUPS               | 2.0000000     | 2.0000000     |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| HAZ<br>ADDITION<br>REGIONS | PO<br>PSIA | P<br>PSIA | DEG. R  | T<br>FT/SEC | U | H    | LP<br>INCHES | AP<br>SQ. IN. | WDOT<br>LB/SEC | DWDT<br>LB/SEC | DM/DT<br>LB/SEC | RB<br>IN/SEC | TAU<br>IN. | RBTO<br>IN/SEC | TAUTO<br>IN. |
|----------------------------|------------|-----------|---------|-------------|---|------|--------------|---------------|----------------|----------------|-----------------|--------------|------------|----------------|--------------|
| FORE                       | 493.29     | 493.29    | 6082.92 | 4.24        |   | .001 | 434.02       | 14980.31      | 94.22          | 89.47          | -4.75           | .3378        | 40.375     | .0000          | .000         |
| 15.000                     | 493.29     | 493.29    | 6082.92 | 10.51       |   | .003 | 434.28       | 15007.14      | 233.87         | 139.59         | -0.06           | .3378        | 40.331     | .0000          | .000         |
| 35.000                     | 493.29     | 493.29    | 6082.91 | 16.77       |   | .005 | 434.55       | 15025.94      | 373.62         | 139.68         | -0.06           | .3378        | 40.326     | .0000          | .000         |
| 45.000                     | 493.29     | 493.29    | 6082.90 | 23.02       |   | .007 | 434.82       | 15044.69      | 513.45         | 139.77         | -0.06           | .3379        | 40.322     | .0000          | .000         |
| 65.000                     | 493.28     | 493.26    | 6082.89 | 29.25       |   | .008 | 435.08       | 15063.40      | 653.37         | 139.86         | -0.06           | .3379        | 40.317     | .0000          | .000         |
| 75.000                     | 493.27     | 493.25    | 6082.87 | 35.48       |   | .010 | 435.35       | 15082.08      | 793.39         | 139.95         | -0.06           | .3379        | 40.312     | .0000          | .000         |
| 90.000                     | 493.27     | 493.23    | 6082.85 | 41.69       |   | .012 | 435.62       | 15100.71      | 933.49         | 140.04         | -0.06           | .3379        | 40.307     | .0000          | .000         |
| 105.000                    | 493.25     | 493.20    | 6082.83 | 47.90       |   | .014 | 435.88       | 15119.31      | 1073.68        | 140.13         | -0.06           | .3379        | 40.302     | .0000          | .000         |
| 116.761                    | 493.24     | 493.18    | 6082.81 | 52.76       |   | .015 | 436.09       | 15133.87      | 1183.67        | 139.93         | -0.05           | .3379        | 40.296     | .0000          | .000         |
| 116.771                    | 493.24     | 493.17    | 6082.79 | 58.00       |   | .016 | 436.27       | 15148.94      | 1183.67        | .00            | -0.00           | .3379        | 40.297     | .0000          | .000         |
| 131.771                    | 493.23     | 493.16    | 6082.80 | 55.27       |   | .016 | 436.42       | 15164.72      | 1187.24        | 3.27           | -0.30           | .3379        | 40.297     | .0000          | .000         |
| 143.919                    | 493.22     | 493.15    | 6082.80 | 56.67       |   | .016 | 436.55       | 15174.92      | 1266.47        | 79.12          | -0.11           | .3379        | 40.290     | .0000          | .000         |
| 156.919                    | 493.20     | 493.11    | 6082.77 | 62.71       |   | .018 | 436.81       | 15192.39      | 1406.64        | 140.10         | -0.06           | .3379        | 40.284     | .0000          | .000         |
| 173.919                    | 493.19     | 493.08    | 6082.74 | 68.72       |   | .020 | 437.00       | 15189.58      | 1547.10        | 140.40         | -0.06           | .3379        | 40.278     | .0000          | .000         |
| 188.919                    | 493.17     | 493.04    | 6082.70 | 74.69       |   | .021 | 437.09       | 15246.48      | 1687.85        | 140.69         | -0.06           | .3379        | 40.272     | .0000          | .000         |
| 203.919                    | 493.14     | 492.99    | 6082.67 | 80.64       |   | .023 | 438.78       | 15303.11      | 1828.91        | 140.99         | -0.06           | .3380        | 40.266     | .0000          | .000         |
| 218.919                    | 493.12     | 492.95    | 6082.63 | 86.57       |   | .025 | 439.67       | 15359.44      | 1970.25        | 141.28         | -0.06           | .3380        | 40.259     | .0000          | .000         |
| 233.919                    | 493.10     | 492.90    | 6082.59 | 92.46       |   | .026 | 440.56       | 15415.50      | 2111.90        | 141.58         | -0.06           | .3380        | 40.253     | .0000          | .000         |
| 248.919                    | 493.07     | 492.85    | 6082.54 | 98.33       |   | .028 | 441.45       | 15471.27      | 2253.86        | 141.89         | -0.06           | .3381        | 40.246     | .0000          | .000         |
| 263.919                    | 493.04     | 492.79    | 6082.50 | 104.17      |   | .030 | 442.34       | 15526.75      | 2396.12        | 142.20         | -0.07           | .3381        | 40.240     | .0000          | .000         |
| 278.919                    | 493.01     | 492.73    | 6082.45 | 109.99      |   | .031 | 443.23       | 15581.95      | 2538.69        | 142.50         | -0.07           | .3382        | 40.233     | .0000          | .000         |
| 293.919                    | 492.98     | 492.67    | 6082.40 | 115.79      |   | .033 | 444.12       | 15636.87      | 2681.56        | 142.81         | -0.07           | .3382        | 40.226     | .0000          | .000         |
| 308.919                    | 492.94     | 492.60    | 6082.34 | 121.56      |   | .035 | 445.01       | 15691.50      | 2824.74        | 143.11         | -0.07           | .3383        | 40.220     | .0000          | .000         |
| 323.919                    | 492.91     | 492.53    | 6082.29 | 127.31      |   | .036 | 445.90       | 15745.86      | 2968.22        | 143.42         | -0.07           | .3383        | 40.213     | .0000          | .000         |
| 338.919                    | 492.87     | 492.46    | 6082.23 | 133.04      |   | .038 | 446.80       | 15799.92      | 3112.01        | 143.72         | -0.07           | .3383        | 40.206     | .0000          | .000         |
| 353.919                    | 492.83     | 492.38    | 6082.17 | 138.75      |   | .039 | 447.69       | 15853.70      | 3256.11        | 144.03         | -0.07           | .3384        | 40.198     | .0000          | .000         |
| 368.919                    | 492.79     | 492.31    | 6082.11 | 144.44      |   | .041 | 448.58       | 15907.92      | 3400.51        | 144.33         | -0.07           | .3384        | 40.191     | .0000          | .000         |
| 383.919                    | 492.74     | 492.22    | 6082.04 | 150.10      |   | .043 | 449.47       | 15960.42      | 3545.22        | 144.64         | -0.07           | .3385        | 40.184     | .0000          | .000         |
| 398.919                    | 492.70     | 492.14    | 6081.97 | 155.75      |   | .044 | 450.36       | 16013.35      | 3690.26        | 144.96         | -0.07           | .3386        | 40.176     | .0000          | .000         |
| 413.048                    | 492.68     | 492.11    | 6081.95 | 157.31      |   | .045 | 450.60       | 16027.07      | 3730.23        | 145.22         | -0.07           | .3386        | 40.169     | .0000          | .000         |
| 413.048                    | 492.64     | 492.03    | 6081.87 | 163.68      |   | .046 | 449.15       | 16005.11      | 3875.33        | 145.02         | -0.07           | .3388        | 40.167     | .0000          | .000         |
| 427.051                    | 492.62     | 491.97    | 6081.82 | 167.51      |   | .048 | 448.28       | 15991.60      | 3962.24        | 86.87          | -0.04           | .3390        | 40.161     | .0000          | .000         |
| 427.061                    | 492.61     | 491.81    | 6081.56 | 186.58      |   | .053 | 438.81       | 14361.86      | 3962.24        | .00            | -0.00           | .3389        | 40.187     | .0000          | .000         |
| 442.061                    | 492.58     | 491.61    | 6081.61 | 183.41      |   | .052 | 438.26       | 14611.46      | 3962.67        | .00            | -0.43           | .3381        | 40.184     | .0000          | .000         |
| 457.061                    | 492.53     | 491.77    | 6081.62 | 182.33      |   | .052 | 404.28       | 14873.94      | 4009.82        | 46.91          | -0.24           | .3376        | 40.155     | .0000          | .000         |
| 463.204                    | 492.50     | 491.73    | 6081.61 | 183.19      |   | .052 | 433.92       | 14985.14      | 4058.42        | 48.56          | -0.04           | .3375        | 40.114     | .0000          | .000         |
| 478.204                    | 492.45     | 491.63    | 6081.52 | 189.20      |   | .054 | 434.49       | 15026.80      | 4197.95        | 139.47         | -0.06           | .3375        | 40.093     | .0000          | .000         |
| 493.204                    | 492.39     | 491.52    | 6081.44 | 194.79      |   | .055 | 435.07       | 15068.26      | 4337.67        | 139.66         | -0.06           | .3375        | 40.083     | .0000          | .000         |
| 508.204                    | 492.33     | 491.40    | 6081.35 | 200.57      |   | .057 | 435.64       | 15109.52      | 4477.57        | 139.84         | -0.06           | .3375        | 40.073     | .0000          | .000         |
| 523.204                    | 492.27     | 491.29    | 6081.26 | 206.33      |   | .059 | 436.21       | 15150.57      | 4617.66        | 140.03         | -0.06           | .3375        | 40.063     | .0000          | .000         |
| 538.204                    | 492.20     | 491.17    | 6081.16 | 212.07      |   | .060 | 436.79       | 15191.42      | 4757.94        | 140.21         | -0.06           | .3375        | 40.053     | .0000          | .000         |
| 553.204                    | 492.14     | 491.05    | 6081.07 | 217.80      |   | .062 | 437.36       | 15232.06      | 4898.40        | 140.40         | -0.06           | .3375        | 40.042     | .0000          | .000         |
| 568.204                    | 492.07     | 490.92    | 6080.97 | 223.51      |   | .063 | 437.94       | 15272.51      | 5039.04        | 140.58         | -0.06           | .3375        | 40.032     | .0000          | .000         |
| 583.204                    | 492.00     | 490.79    | 6080.87 | 229.21      |   | .065 | 438.51       | 15312.74      | 5179.87        | 140.77         | -0.07           | .3375        | 40.021     | .0000          | .000         |
| 598.204                    | 491.93     | 490.68    | 6080.76 | 234.90      |   | .067 | 439.08       | 15352.78      | 5320.90        | 140.96         | -0.07           | .3375        | 40.010     | .0000          | .000         |
| 613.204                    | 491.85     | 490.53    | 6080.66 | 240.57      |   | .068 | 439.66       | 15392.61      | 5462.12        | 141.15         | -0.07           | .3376        | 40.000     | .0000          | .000         |

|          |       |       |        |       |     |       |         |        |       |     |      |       |      |     |
|----------|-------|-------|--------|-------|-----|-------|---------|--------|-------|-----|------|-------|------|-----|
| 626204   | 49170 | 49039 | 608055 | 24623 | 070 | 44023 | 1543224 | 560353 | 14135 | -07 | 3376 | 39989 | 0000 | 000 |
| 643204   | 49170 | 49025 | 608044 | 25188 | 072 | 44081 | 1547166 | 571514 | 14154 | -07 | 3376 | 39978 | 0000 | 000 |
| 658204   | 49162 | 49010 | 608033 | 25751 | 073 | 44130 | 1551098 | 588695 | 14174 | -07 | 3376 | 39967 | 0000 | 000 |
| 673204   | 49154 | 48996 | 608021 | 26314 | 075 | 44196 | 1554990 | 602895 | 14193 | -07 | 3377 | 39956 | 0000 | 000 |
| 688204   | 49146 | 48981 | 608010 | 26875 | 076 | 44253 | 1558872 | 617114 | 14212 | -07 | 3377 | 39945 | 0000 | 000 |
| 703204   | 49138 | 48965 | 607998 | 27435 | 079 | 44310 | 1562733 | 631353 | 14232 | -07 | 3377 | 39934 | 0000 | 000 |
| 718204   | 49129 | 48950 | 607986 | 27994 | 079 | 44368 | 1566573 | 645611 | 14251 | -07 | 3377 | 39923 | 0000 | 000 |
| 726191   | 49124 | 48941 | 607979 | 28292 | 080 | 44396 | 1568613 | 653211 | 7596  | -04 | 3377 | 39911 | 0000 | 000 |
| 741191   | 49113 | 48925 | 607971 | 28664 | 081 | 44596 | 1582603 | 667525 | 14308 | -07 | 3380 | 39906 | 0000 | 000 |
| 746236   | 49109 | 48919 | 607968 | 28792 | 082 | 44664 | 1587461 | 672452 | 4925  | -02 | 3380 | 39900 | 0000 | 000 |
| 7462346  | 49106 | 48889 | 607917 | 30960 | 088 | 43310 | 1477074 | 672452 | 00    | -00 | 3380 | 39950 | 0000 | 000 |
| 7612346  | 49100 | 48889 | 607932 | 30354 | 086 | 4250  | 1506731 | 672499 | 00    | -46 | 3379 | 39950 | 0000 | 000 |
| 7762346  | 49091 | 48888 | 607945 | 29808 | 085 | 44811 | 1536499 | 673424 | 8628  | -32 | 3378 | 39925 | 0000 | 000 |
| 7912346  | 49078 | 48877 | 607949 | 29621 | 084 | 38871 | 1566377 | 682070 | 8628  | -18 | 3377 | 39895 | 0000 | 000 |
| 7942331  | 49074 | 48873 | 607949 | 29627 | 084 | 44461 | 1573334 | 685184 | 3111  | -02 | 3377 | 39858 | 0000 | 000 |
| 8072331  | 49064 | 48856 | 607937 | 30121 | 086 | 44560 | 1580378 | 699498 | 14307 | -08 | 3378 | 39853 | 0000 | 000 |
| 8242331  | 49054 | 48839 | 607926 | 30614 | 087 | 44659 | 1587358 | 713851 | 14345 | -08 | 3379 | 39843 | 0000 | 000 |
| 8392331  | 49043 | 48822 | 607914 | 31106 | 088 | 44757 | 1594276 | 728240 | 14381 | -08 | 3380 | 39833 | 0000 | 000 |
| 8542331  | 49033 | 48804 | 607902 | 31596 | 090 | 44856 | 1601107 | 742618 | 14370 | -08 | 3382 | 39823 | 0000 | 000 |
| 8692331  | 49024 | 48787 | 607887 | 32189 | 091 | 45272 | 1601583 | 756540 | 13922 | 00  | 3390 | 39783 | 0000 | 000 |
| 8842331  | 49024 | 48787 | 607887 | 32194 | 091 | 16977 | 1601739 | 756724 | 174   | -11 | 3389 | 39025 | 0000 | 000 |
| 8992331  | 49024 | 48787 | 607887 | 32185 | 091 | 00    | 1602230 | 756737 | 00    | -13 | 3389 | 38255 | 0000 | 000 |
| 9142331  | 49024 | 48787 | 607887 | 32182 | 091 | 00    | 1602399 | 756754 | 00    | -17 | 3389 | 37486 | 0000 | 000 |
| 9292331  | 49024 | 48787 | 607887 | 32181 | 091 | 00    | 1602466 | 756773 | 00    | -19 | 3389 | 36717 | 0000 | 000 |
| 9442331  | 49024 | 48787 | 607887 | 32183 | 091 | 00    | 1602431 | 756794 | 00    | -21 | 3389 | 35948 | 0000 | 000 |
| 9592331  | 49024 | 48787 | 607887 | 32187 | 091 | 00    | 1602293 | 756818 | 00    | -24 | 3389 | 35178 | 0000 | 000 |
| 9742331  | 49024 | 48787 | 607887 | 32193 | 091 | 00    | 1602552 | 756843 | 00    | -26 | 3389 | 34409 | 0000 | 000 |
| 9892331  | 49024 | 48787 | 607887 | 32201 | 091 | 00    | 1601709 | 756871 | 00    | -28 | 3389 | 33640 | 0000 | 000 |
| 10042331 | 49024 | 48787 | 607886 | 32211 | 091 | 00    | 1601264 | 756901 | 00    | -30 | 3389 | 32871 | 0000 | 000 |
| 10192331 | 49024 | 48787 | 607886 | 32223 | 091 | 00    | 1600716 | 756933 | 00    | -32 | 3389 | 32101 | 0000 | 000 |
| 10342331 | 49024 | 48787 | 607886 | 32238 | 092 | 00    | 1600066 | 756967 | 00    | -34 | 3389 | 31332 | 0000 | 000 |
| 10492331 | 49025 | 48787 | 607885 | 32244 | 092 | 00    | 1599777 | 756981 | 00    | -14 | 3389 | 31024 | 0000 | 000 |
| 10552331 | 49025 | 48787 | 607884 | 32302 | 092 | 00    | 1596984 | 757016 | 00    | -35 | 3389 | 30483 | 0000 | 000 |
| 10702331 | 49026 | 48787 | 607883 | 32360 | 092 | 00    | 1594180 | 757051 | 00    | -35 | 3389 | 29942 | 0000 | 000 |
| 10842331 | 49027 | 48787 | 607881 | 32413 | 092 | 00    | 1591669 | 757082 | 00    | -31 | 3389 | 29459 | 0000 | 000 |
| AFT(A)   | 48543 | 46328 | 604228 | 99813 | 284 | 0000  | 1582373 | 757188 | 00    | -64 | 3380 | 29460 | 0000 | 000 |
| AFT(U)   | 48542 | 46542 | 604048 | -03   | 000 | 0000  | 1041312 | 42     | 00    | -42 | 3377 | 20670 | 0000 | 000 |

|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PG<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+02                            | 4.9324+02  | 4.9318+02 | 6.0828+03   | 4.8507+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1837+03       |
| AFT     | 1.1677+02                            | 4.9323+02  | 4.9317+02 | 6.0828+03   | 4.8508+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1837+03       |

GAS BUILDUP IN SLOT, DW/DT = -2.4284-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 4.9262+02 | 4.9197+02 | 6.0818+03 | 1.6351+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.9622+03 |
| AFT     | 4.2706+02 | 4.9245+02 | 4.9181+02 | 6.0816+03 | 1.6356+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.9622+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.4158-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 4.9109+02 | 4.8919+02 | 6.0797+03 | 2.7898+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7245+03 |
| AFT     | 7.4635+02 | 4.9078+02 | 4.8889+02 | 6.0792+03 | 2.7913+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7245+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.4265-04

|                                       |          |              |               |                  |                |             |            |              |
|---------------------------------------|----------|--------------|---------------|------------------|----------------|-------------|------------|--------------|
| NEB BURNOUT INCREMENT LOCATION =      | 869.7810 | SECTOR NO. 5 | TAU = 39.7938 | TAUWDP = 39.7938 | TIME = 107.00  |             |            |              |
| NEB BURNOUT INCREMENT LOCATION =      | 869.7810 | SECTOR NO. 6 | TAU = 39.7938 | TAUWDP = 39.7938 | TIME = 107.00  |             |            |              |
| NEB BURNOUT INCREMENT LOCATION =      | 869.7810 | SECTOR NO. 7 | TAU = 39.7938 | TAUWDP = 39.7938 | TIME = 107.00  |             |            |              |
| NEB BURNOUT INCREMENT LOCATION =      | 869.7810 | SECTOR NO. 8 | TAU = 39.7938 | TAUWDP = 39.7938 | TIME = 107.00  |             |            |              |
| *PARTBN* TIME=107.50 IS=1 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 865.49    | AINCHI= 854.78 | DELZ=10.706 | ALP=452.86 | ALPHI=449.78 |
| *PARTBN* TIME=107.50 IS=2 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 864.67    | AINCHI= 854.78 | DELZ= 9.887 | ALP=452.88 | ALPHI=450.03 |
| *PARTBN* TIME=107.50 IS=3 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 864.82    | AINCHI= 854.78 | DELZ=10.044 | ALP=452.87 | ALPHI=449.99 |
| *PARTBN* TIME=107.50 IS=4 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 865.71    | AINCHI= 854.78 | DELZ=10.929 | ALP=452.85 | ALPHI=449.72 |
| *PARTBN* TIME=107.50 IS=5 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 866.76    | AINCHI= 854.78 | DELZ=11.982 | ALP=452.82 | ALPHI=449.39 |
| *PARTBN* TIME=107.50 IS=6 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 867.07    | AINCHI= 854.78 | DELZ=12.286 | ALP=452.81 | ALPHI=449.29 |
| *PARTBN* TIME=107.50 IS=7 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 867.01    | AINCHI= 854.78 | DELZ=12.227 | ALP=452.82 | ALPHI=449.31 |
| *PARTBN* TIME=107.50 IS=8 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 866.65    | AINCHI= 854.78 | DELZ=11.873 | ALP=452.82 | ALPHI=449.42 |
| *PARTBN* TIME=107.50 IS=1 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 865.49    | AINCHI= 854.78 | DELZ=10.706 | ALP=452.86 | ALPHI=449.78 |
| *PARTBN* TIME=107.50 IS=2 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 864.67    | AINCHI= 854.78 | DELZ= 9.887 | ALP=452.88 | ALPHI=450.03 |
| *PARTBN* TIME=107.50 IS=3 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 864.82    | AINCHI= 854.78 | DELZ=10.044 | ALP=452.87 | ALPHI=449.99 |
| *PARTBN* TIME=107.50 IS=4 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 865.71    | AINCHI= 854.78 | DELZ=10.929 | ALP=452.85 | ALPHI=449.72 |
| *PARTBN* TIME=107.50 IS=5 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 866.76    | AINCHI= 854.78 | DELZ=11.982 | ALP=452.82 | ALPHI=449.39 |
| *PARTBN* TIME=107.50 IS=6 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 867.07    | AINCHI= 854.78 | DELZ=12.286 | ALP=452.81 | ALPHI=449.29 |
| *PARTBN* TIME=107.50 IS=7 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 867.01    | AINCHI= 854.78 | DELZ=12.227 | ALP=452.82 | ALPHI=449.31 |
| *PARTBN* TIME=107.50 IS=8 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 866.65    | AINCHI= 854.78 | DELZ=11.873 | ALP=452.82 | ALPHI=449.42 |
| *PARTBN* TIME=108.00 IS=1 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 862.16    | AINCHI= 854.78 | DELZ= 7.383 | ALP=452.94 | ALPHI=450.64 |
| *PARTBN* TIME=108.00 IS=2 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 861.34    | AINCHI= 854.78 | DELZ= 6.560 | ALP=452.97 | ALPHI=451.10 |
| *PARTBN* TIME=108.00 IS=3 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 861.50    | AINCHI= 854.78 | DELZ= 6.718 | ALP=452.96 | ALPHI=451.05 |
| *PARTBN* TIME=108.00 IS=4 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 862.39    | AINCHI= 854.78 | DELZ= 7.607 | ALP=452.94 | ALPHI=450.78 |
| *PARTBN* TIME=108.00 IS=5 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 863.44    | AINCHI= 854.78 | DELZ= 8.664 | ALP=452.91 | ALPHI=450.45 |
| *PARTBN* TIME=108.00 IS=6 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 863.75    | AINCHI= 854.78 | DELZ= 8.970 | ALP=452.90 | ALPHI=450.35 |
| *PARTBN* TIME=108.00 IS=7 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 863.69    | AINCHI= 854.78 | DELZ= 8.910 | ALP=452.90 | ALPHI=450.37 |
| *PARTBN* TIME=108.00 IS=8 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 863.33    | AINCHI= 854.78 | DELZ= 8.553 | ALP=452.91 | ALPHI=450.48 |
| *PARTBN* TIME=108.00 IS=1 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 862.16    | AINCHI= 854.78 | DELZ= 7.383 | ALP=452.94 | ALPHI=450.64 |
| *PARTBN* TIME=108.00 IS=2 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 861.34    | AINCHI= 854.78 | DELZ= 6.560 | ALP=452.97 | ALPHI=451.10 |
| *PARTBN* TIME=108.00 IS=3 ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78        | AINCW= 861.50    | AINCHI= 854.78 | DELZ= 6.718 | ALP=452.96 | ALPHI=451.05 |

•NTBN• TIME=106.00 IS=4 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 862.39 AINCHI= 854.78 DELZ= 7.607 ALP=452.94 ALPHI=450.78  
•PARTBN• TIME=108.00 IS=5 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 863.44 AINCHI= 854.78 DELZ= 8.664 ALP=452.91 ALPHI=450.45  
•PARTBN• TIME=108.00 IS=6 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 863.75 AINCHI= 854.78 DELZ= 8.970 ALP=452.90 ALPHI=450.35  
•PARTBN• TIME=108.00 IS=7 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 863.69 AINCHI= 854.78 DELZ= 8.910 ALP=452.90 ALPHI=450.37  
•PARTBN• TIME=108.00 IS=8 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 863.33 AINCHI= 854.78 DELZ= 8.553 ALP=452.91 ALPHI=450.48

IGNITION TIME, TIME (S)

108.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 8597383.1     | 1932768.6    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 8608203.0     | 1935201.0    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 66912.655     | 15042.563    |
| DELIVERED TOTAL IMPULSE (N•S,LBF•S)        | SRMOTI               | .11322825+10  | .26578769+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | YISP                 | 255.69158     | 255.69158    |
| VACUUM TOTAL IMPULSE (N•S,LBF•S)           | SRMVTI               | .12322297+10  | .27701627+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6282625     | 1.6282625    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3377.1010     | 7489.3257    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 485154.65     | 1069582.9    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 35.911537     | 79.171387    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 228.35956     | 503.44666    |
| TOTAL BURN AREA (M•2,IN•2)                 | ABTOT                | 221.45745     | 343259.66    |
| TOTAL PROPELLANT VOLUME (M•3,IN•3)         | VF                   | 13.210529     | 806644.10    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 20460.950     | 45126.312    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1167.5976     | 2574.1122    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1596133     | 1.1596133    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.819906     | 28.263654    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1557.3617     | 5109.4544    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .92068221-01  | .92068221-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M•2,LBF/IN•2)            | PH                   | .33627223+09  | 487.72164    |
| PRESSURE INTEGRAL (N•S/M•2,LBF•S/IN•2)     | SPHDI                | .51274493+11  | 74367.365    |
| BURN AREA (M•2,IN•2)                       | AHM                  | 2.5220784     | 3909.2294    |
| BURN RATE (M/S,IN/S)                       | R0Z(1)               | .85575087-02  | .33690979    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.0341177     | 40.713295    |
| PROPELLANT VOLUME (M•3,IN•3)               | VFH                  | .33923813     | 20701.581    |
| GAS VOLUME (M•3,IN•3)                      | VPH                  | 54.764594     | 3341940.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3378.4406     | 6081.1931    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M•2,IN•2)                | ABCYL                | 218.93533     | 339350.44    |
| SEGMENT FACE BURN AREA (M•2,IN•2)          | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M•3,IN•3)               | VFCYL                | 12.877324     | 785822.54    |
| GAS VOLUME (M•3,IN•3)                      | VP                   | 275.68869     | 1682355.6    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M•2,LBF/IN•2)    | PON                  | .33088354+09  | 479.92601    |
| PRESSURE INTEGRAL (N•S/M•2,LBF•S/IN•2)     | SPONDI               | .48891929+11  | 70911.748    |
| BURN AREA (M•2,IN•2)                       | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(1)+1,1)          | .85496970-02  | .33660225    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(1)+2,1)          | .85421711-02  | .33630595    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(1)+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(1)+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M•3,IN•3)               | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M•3,IN•3)                      | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(1)+2,3)         | 3377.0945     | 6078.7700    |
| PORT AREA, NOZ ENT (M•2,IN•2)              | AZA                  | 10.208039     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M•2,IN•2)                     | AT                   | 1.5977650     | 2476.5407    |
| EXPANSION RATIO                            | EPR                  | 6.7272189     | 6.7272189    |
| PRESSURE RATIO                             | PEPU                 | .23465967-01  | .23465967-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKNST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 2.7000000     | 2.6000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS     | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDT   | OW/DT  | RB     | TAU    | RBTO   | TAUTO |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
| ADDITION | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| REGIONS  |        |        |         |        |      |        |          |         |        |        |        |        |        |       |
| FORE     | 487.72 | 487.72 | 6081.19 | 3.96   | .001 | 436.14 | 15135.15 | 87.83   | 83.49  | -4.34  | .3366  | 40.713 | .0000  | .0000 |
| 15.000   | 487.72 | 487.72 | 6081.19 | 10.24  | .003 | 436.41 | 15154.08 | 227.62  | 139.76 | -.04   | .3366  | 40.668 | .0000  | .0000 |
| 30.000   | 487.72 | 487.71 | 6081.18 | 16.52  | .005 | 436.67 | 15172.97 | 367.51  | 139.85 | -.04   | .3366  | 40.664 | .0000  | .0000 |
| 45.000   | 487.72 | 487.70 | 6081.17 | 22.78  | .006 | 436.94 | 15191.82 | 507.49  | 139.94 | -.04   | .3366  | 40.659 | .0000  | .0000 |
| 60.000   | 487.71 | 487.69 | 6081.16 | 29.04  | .008 | 437.21 | 15210.62 | 647.55  | 140.03 | -.04   | .3366  | 40.655 | .0000  | .0000 |
| 75.000   | 487.67 | 487.65 | 6081.15 | 35.28  | .010 | 437.47 | 15229.39 | 787.71  | 140.12 | -.04   | .3366  | 40.650 | .0000  | .0000 |
| 90.000   | 487.69 | 487.65 | 6081.13 | 41.51  | .012 | 437.74 | 15248.12 | 927.95  | 140.21 | -.04   | .3366  | 40.645 | .0000  | .0000 |
| 105.000  | 487.68 | 487.63 | 6081.10 | 47.73  | .014 | 438.01 | 15266.81 | 1068.29 | 140.30 | -.04   | .3367  | 40.639 | .0000  | .0000 |
| 116.761  | 487.67 | 487.61 | 6081.09 | 52.60  | .015 | 438.21 | 15281.44 | 1178.38 | 140.36 | -.03   | .3367  | 40.634 | .0000  | .0000 |
| 116.771  | 487.67 | 487.59 | 6081.06 | 58.64  | .017 | 438.56 | 15308.11 | 1178.38 | .00    | -.00   | .3366  | 40.635 | .0000  | .0000 |
| 131.771  | 487.66 | 487.57 | 6081.07 | 55.28  | .016 | 438.38 | 15284.14 | 1178.68 | .00    | -.29   | .3366  | 40.635 | .0000  | .0000 |
| 143.919  | 487.65 | 487.57 | 6081.07 | 56.28  | .016 | 437.35 | 15222.19 | 1255.80 | 77.03  | -.09   | .3366  | 40.627 | .0000  | .0000 |
| 158.919  | 487.63 | 487.54 | 6081.04 | 62.33  | .018 | 438.16 | 15280.00 | 1396.09 | 140.26 | -.04   | .3367  | 40.621 | .0000  | .0000 |
| 173.919  | 487.61 | 487.51 | 6081.01 | 68.36  | .019 | 438.98 | 15337.52 | 1536.66 | 140.53 | -.04   | .3367  | 40.615 | .0000  | .0000 |
| 188.919  | 487.59 | 487.47 | 6080.98 | 74.35  | .021 | 439.79 | 15394.75 | 1677.51 | 140.81 | -.04   | .3367  | 40.609 | .0000  | .0000 |
| 203.919  | 487.57 | 487.42 | 6080.94 | 80.31  | .023 | 440.60 | 15451.70 | 1818.63 | 141.09 | -.04   | .3368  | 40.603 | .0000  | .0000 |
| 218.919  | 487.55 | 487.38 | 6080.90 | 86.25  | .024 | 441.42 | 15508.36 | 1960.04 | 141.37 | -.04   | .3368  | 40.597 | .0000  | .0000 |
| 233.919  | 487.52 | 487.33 | 6080.86 | 92.16  | .026 | 442.23 | 15564.73 | 2101.73 | 141.65 | -.04   | .3369  | 40.591 | .0000  | .0000 |
| 248.919  | 487.50 | 487.28 | 6080.82 | 98.04  | .028 | 443.04 | 15620.61 | 2243.71 | 141.93 | -.04   | .3369  | 40.584 | .0000  | .0000 |
| 263.919  | 487.47 | 487.22 | 6080.77 | 103.89 | .029 | 443.86 | 15676.61 | 2385.96 | 142.21 | -.04   | .3370  | 40.578 | .0000  | .0000 |
| 278.919  | 487.44 | 487.16 | 6080.72 | 109.73 | .031 | 444.67 | 15732.12 | 2528.49 | 142.49 | -.04   | .3370  | 40.571 | .0000  | .0000 |
| 293.919  | 487.41 | 487.10 | 6080.67 | 115.53 | .033 | 445.49 | 15787.34 | 2671.31 | 142.77 | -.04   | .3371  | 40.564 | .0000  | .0000 |
| 308.919  | 487.37 | 487.04 | 6080.62 | 121.31 | .034 | 446.30 | 15842.28 | 2814.40 | 143.05 | -.04   | .3371  | 40.558 | .0000  | .0000 |
| 323.919  | 487.34 | 486.97 | 6080.56 | 127.07 | .036 | 447.11 | 15896.92 | 2957.78 | 143.33 | -.04   | .3372  | 40.551 | .0000  | .0000 |
| 338.919  | 487.32 | 486.90 | 6080.52 | 132.81 | .038 | 447.91 | 15951.28 | 3101.45 | 143.62 | -.04   | .3372  | 40.544 | .0000  | .0000 |
| 353.919  | 487.26 | 486.82 | 6080.44 | 138.52 | .039 | 448.74 | 16005.36 | 3245.41 | 143.92 | -.05   | .3373  | 40.536 | .0000  | .0000 |
| 368.919  | 487.22 | 486.74 | 6080.38 | 144.22 | .041 | 449.55 | 16059.14 | 3389.67 | 144.21 | -.05   | .3374  | 40.529 | .0000  | .0000 |
| 383.919  | 487.17 | 486.66 | 6080.32 | 149.89 | .043 | 450.37 | 16112.64 | 3534.23 | 144.51 | -.05   | .3375  | 40.522 | .0000  | .0000 |
| 398.919  | 487.13 | 486.58 | 6080.25 | 155.55 | .044 | 451.18 | 16165.85 | 3679.07 | 144.80 | -.05   | .3376  | 40.515 | .0000  | .0000 |
| 413.048  | 487.12 | 486.56 | 6080.23 | 157.10 | .045 | 451.40 | 16180.45 | 3719.00 | 144.91 | -.05   | .3376  | 40.507 | .0000  | .0000 |
| 428.048  | 487.08 | 486.47 | 6080.15 | 163.49 | .046 | 450.78 | 16157.44 | 3864.02 | 144.97 | -.05   | .3378  | 40.506 | .0000  | .0000 |
| 442.051  | 487.05 | 486.41 | 6080.10 | 167.32 | .048 | 450.41 | 16143.79 | 3951.01 | 86.97  | -.03   | .3379  | 40.500 | .0000  | .0000 |
| 457.061  | 487.04 | 486.22 | 6079.79 | 189.66 | .054 | 434.61 | 14247.83 | 3951.01 | .00    | -.00   | .3379  | 40.525 | .0000  | .0000 |
| 472.061  | 487.00 | 486.22 | 6079.85 | 185.08 | .053 | 434.61 | 14247.83 | 3951.42 | .00    | -.41   | .3370  | 40.522 | .0000  | .0000 |
| 487.061  | 486.94 | 486.19 | 6079.89 | 182.57 | .052 | 433.36 | 14974.25 | 3996.89 | 45.25  | -.22   | .3364  | 40.493 | .0000  | .0000 |
| 502.061  | 486.91 | 486.15 | 6079.89 | 182.07 | .052 | 436.04 | 15131.80 | 4045.38 | 48.46  | -.03   | .3362  | 40.451 | .0000  | .0000 |
| 517.204  | 486.85 | 486.04 | 6079.80 | 188.70 | .054 | 436.62 | 15173.68 | 4185.05 | 139.63 | -.04   | .3362  | 40.430 | .0000  | .0000 |
| 532.204  | 486.79 | 485.93 | 6079.71 | 194.51 | .055 | 437.16 | 15215.36 | 4324.91 | 139.82 | -.04   | .3362  | 40.420 | .0000  | .0000 |
| 547.204  | 486.73 | 485.82 | 6079.62 | 200.31 | .057 | 437.79 | 15256.84 | 4464.95 | 140.00 | -.04   | .3362  | 40.410 | .0000  | .0000 |
| 562.204  | 486.67 | 485.71 | 6079.53 | 206.09 | .059 | 438.34 | 15298.11 | 4605.18 | 140.19 | -.04   | .3363  | 40.400 | .0000  | .0000 |
| 577.204  | 486.61 | 485.59 | 6079.44 | 211.85 | .060 | 438.91 | 15339.17 | 4745.60 | 140.38 | -.04   | .3363  | 40.390 | .0000  | .0000 |
| 592.204  | 486.54 | 485.47 | 6079.34 | 217.60 | .062 | 439.49 | 15380.03 | 4886.22 | 140.57 | -.04   | .3363  | 40.379 | .0000  | .0000 |
| 607.204  | 486.48 | 485.34 | 6079.24 | 223.34 | .063 | 439.66 | 15420.67 | 5027.32 | 140.77 | -.04   | .3363  | 40.369 | .0000  | .0000 |
| 622.204  | 486.41 | 485.22 | 6079.14 | 229.06 | .065 | 440.03 | 15461.12 | 5168.33 | 140.96 | -.04   | .3364  | 40.358 | .0000  | .0000 |
| 637.204  | 486.34 | 485.09 | 6079.04 | 234.76 | .067 | 441.21 | 15501.35 | 5309.23 | 141.16 | -.04   | .3364  | 40.348 | .0000  | .0000 |
| 652.204  | 486.27 | 484.95 | 6078.93 | 240.46 | .068 | 441.78 | 15541.38 | 5450.62 | 141.35 | -.04   | .3364  | 40.337 | .0000  | .0000 |



|          |        |        |         |        |      |         |          |         |        |     |      |        |      |
|----------|--------|--------|---------|--------|------|---------|----------|---------|--------|-----|------|--------|------|
| 620.204  | 486.19 | 484.82 | 6078.82 | 246.14 | .070 | 442.35  | 15501.21 | 5592.21 | 141.55 | -04 | 3364 | 40.326 | .000 |
| 613.204  | 486.11 | 484.68 | 6078.71 | 251.81 | .071 | 442.93  | 15620.82 | 5734.80 | 141.74 | -04 | 3365 | 40.315 | .000 |
| 658.204  | 486.04 | 484.53 | 6078.60 | 257.46 | .073 | 443.50  | 15660.23 | 5075.97 | 141.93 | -04 | 3365 | 40.304 | .000 |
| 673.204  | 485.96 | 484.39 | 6078.49 | 263.11 | .075 | 444.08  | 15699.44 | 6018.14 | 142.13 | -04 | 3365 | 40.293 | .000 |
| 688.204  | 485.88 | 484.24 | 6078.37 | 268.74 | .076 | 444.65  | 15738.44 | 6160.51 | 142.32 | -05 | 3365 | 40.282 | .000 |
| 703.204  | 485.79 | 484.09 | 6078.25 | 274.37 | .078 | 445.22  | 15777.23 | 6303.07 | 142.53 | -05 | 3366 | 40.271 | .000 |
| 718.204  | 485.71 | 483.93 | 6078.13 | 279.98 | .079 | 445.80  | 15815.81 | 6445.87 | 142.74 | -05 | 3367 | 40.260 | .000 |
| 726.191  | 485.66 | 483.85 | 6078.06 | 282.97 | .080 | 446.10  | 15836.27 | 6521.98 | 76.08  | -02 | 3367 | 40.249 | .000 |
| 741.191  | 485.55 | 483.69 | 6077.98 | 286.72 | .081 | 448.08  | 15977.79 | 6665.34 | 143.32 | -05 | 3369 | 40.244 | .000 |
| 745.336  | 485.51 | 483.63 | 6077.95 | 288.01 | .082 | 448.76  | 16025.83 | 6714.69 | 49.33  | -02 | 3370 | 40.238 | .000 |
| 746.346  | 485.49 | 483.24 | 6077.31 | 315.23 | .090 | -370.80 | 14651.91 | 6714.69 | .00    | -00 | 3369 | 40.288 | .000 |
| 761.346  | 485.38 | 483.24 | 6077.50 | 307.30 | .007 | -117.88 | 15031.43 | 6715.14 | .00    | -45 | 3369 | 40.288 | .000 |
| 776.346  | 485.27 | 483.24 | 6077.68 | 299.85 | .085 | 135.05  | 15412.35 | 6718.19 | 2.74   | -30 | 3368 | 40.263 | .000 |
| 791.346  | 485.12 | 483.14 | 6077.76 | 296.32 | .084 | 387.98  | 15794.67 | 6802.15 | 83.80  | -16 | 3367 | 40.232 | .000 |
| 794.631  | 485.08 | 483.10 | 6077.77 | 296.03 | .084 | 446.74  | 15883.70 | 6833.23 | 31.07  | -02 | 3366 | 40.195 | .000 |
| 809.831  | 484.98 | 482.93 | 6077.65 | 301.00 | .085 | 447.73  | 15954.54 | 6976.60 | 143.31 | -05 | 3368 | 40.191 | .000 |
| 824.831  | 484.88 | 482.76 | 6077.53 | 305.95 | .087 | 448.71  | 16024.74 | 7120.33 | 143.68 | -05 | 3369 | 40.181 | .000 |
| 839.831  | 484.78 | 482.59 | 6077.41 | 310.90 | .088 | 449.70  | 16094.30 | 7264.43 | 144.05 | -05 | 3370 | 40.171 | .000 |
| 854.781  | 484.67 | 482.42 | 6077.29 | 315.82 | .090 | 450.68  | 16162.99 | 7408.43 | 143.94 | -05 | 3371 | 40.161 | .000 |
| 869.781  | 484.63 | 482.32 | 6077.20 | 319.25 | .091 | 452.93  | 16157.91 | 7485.05 | 76.56  | -06 | 3376 | 39.794 | .000 |
| 884.781  | 484.63 | 482.32 | 6077.19 | 319.56 | .091 | .00     | 16142.16 | 7485.13 | .00    | -08 | 3376 | 39.025 | .000 |
| 899.781  | 484.63 | 482.32 | 6077.19 | 319.79 | .091 | .00     | 16130.91 | 7485.25 | .00    | -12 | 3376 | 38.255 | .000 |
| 914.781  | 484.64 | 482.32 | 6077.19 | 320.03 | .091 | .00     | 16119.10 | 7485.39 | .00    | -14 | 3376 | 37.486 | .000 |
| 929.781  | 484.64 | 482.32 | 6077.18 | 320.28 | .091 | .00     | 16106.73 | 7485.55 | .00    | -16 | 3376 | 36.717 | .000 |
| 944.781  | 484.64 | 482.32 | 6077.18 | 320.55 | .091 | .00     | 16093.80 | 7485.74 | .00    | -19 | 3376 | 35.948 | .000 |
| 959.781  | 484.65 | 482.32 | 6077.17 | 320.82 | .091 | .00     | 16080.31 | 7485.95 | .00    | -21 | 3376 | 35.178 | .000 |
| 974.781  | 484.65 | 482.32 | 6077.16 | 321.11 | .091 | .00     | 16066.25 | 7486.18 | .00    | -23 | 3376 | 34.409 | .000 |
| 989.781  | 484.66 | 482.32 | 6077.15 | 321.42 | .091 | .00     | 16051.64 | 7486.43 | .00    | -25 | 3376 | 33.640 | .000 |
| 1004.781 | 484.66 | 482.32 | 6077.15 | 321.73 | .091 | .00     | 16036.47 | 7486.70 | .00    | -27 | 3376 | 32.871 | .000 |
| 1019.781 | 484.67 | 482.32 | 6077.14 | 322.06 | .091 | .00     | 16022.72 | 7486.99 | .00    | -29 | 3376 | 32.101 | .000 |
| 1034.781 | 484.67 | 482.32 | 6077.13 | 322.40 | .092 | .00     | 16009.45 | 7487.29 | .00    | -31 | 3376 | 31.332 | .000 |
| 1049.791 | 484.67 | 482.32 | 6077.13 | 322.54 | .092 | .00     | 15997.77 | 7487.42 | .00    | -13 | 3376 | 31.024 | .000 |
| 1055.791 | 484.68 | 482.32 | 6077.11 | 323.12 | .092 | .00     | 15969.84 | 7487.74 | .00    | -32 | 3376 | 30.483 | .000 |
| 1070.791 | 484.69 | 482.32 | 6077.10 | 323.70 | .092 | .00     | 15941.80 | 7488.07 | .00    | -32 | 3376 | 29.942 | .000 |
| 1084.171 | 484.70 | 482.32 | 6077.08 | 324.22 | .092 | .00     | 15916.69 | 7488.35 | .00    | -29 | 3376 | 29.459 | .000 |
| AFT(A)   | 479.91 | 457.99 | 6040.53 | 998.52 | .284 | .000    | 15823.73 | 7489.33 | .00    | -59 | 3366 | 29.460 | .000 |
| AFT(B)   | 479.90 | 479.90 | 6078.77 | -0.03  | .000 | .000    | 10413.12 | .38     | .00    | -38 | 3363 | 20.670 | .000 |



|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+02                            | 4.8767+02  | 4.8761+02 | 6.0811+03   | 4.8833+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1784+03       |
| AFT     | 1.1677+02                            | 4.8766+02  | 4.8759+02 | 6.0811+03   | 4.8834+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1784+03       |

GAS BUILDUP IN SLOT, DW/DT = -2.2183-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 4.8705+02 | 4.8641+02 | 6.0801+03 | 1.6488+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.9510+03 |
| AFT     | 4.2706+02 | 4.8686+02 | 4.8622+02 | 6.0798+03 | 1.6494+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.9510+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.2093-04

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 4.8551+02 | 4.8363+02 | 6.0779+03 | 2.8173+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7147+03 |
| AFT     | 7.4635+02 | 4.8512+02 | 4.8324+02 | 6.0773+03 | 2.8192+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7147+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.2230-04

|                                  |             |      |             |          |              |        |        |         |          |         |        |        |            |              |
|----------------------------------|-------------|------|-------------|----------|--------------|--------|--------|---------|----------|---------|--------|--------|------------|--------------|
| *PARTBN*                         | TIME=108.50 | IS=1 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 858.84  | AINCHI=  | 854.78  | DELZ=  | 4.063  | ALP=453.03 | ALPHI=451.90 |
| *PARTBN*                         | TIME=108.50 | IS=2 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 858.82  | AINCHI=  | 854.78  | DELZ=  | 3.237  | ALP=453.05 | ALPHI=452.17 |
| *PARTBN*                         | TIME=108.50 | IS=3 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 858.18  | AINCHI=  | 854.78  | DELZ=  | 3.394  | ALP=453.05 | ALPHI=452.12 |
| *PARTBN*                         | TIME=108.50 | IS=4 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 859.07  | AINCHI=  | 854.78  | DELZ=  | 4.288  | ALP=453.03 | ALPHI=451.84 |
| *PARTBN*                         | TIME=108.50 | IS=5 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.13  | AINCHI=  | 854.78  | DELZ=  | 5.351  | ALP=453.00 | ALPHI=451.50 |
| *PARTBN*                         | TIME=108.50 | IS=6 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.44  | AINCHI=  | 854.78  | DELZ=  | 5.659  | ALP=452.99 | ALPHI=451.40 |
| *PARTBN*                         | TIME=108.50 | IS=7 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.38  | AINCHI=  | 854.78  | DELZ=  | 5.599  | ALP=452.99 | ALPHI=451.42 |
| *PARTBN*                         | TIME=108.50 | IS=8 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.02  | AINCHI=  | 854.78  | DELZ=  | 5.239  | ALP=453.00 | ALPHI=451.54 |
| *PARTBN*                         | TIME=108.50 | IS=1 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 858.84  | AINCHI=  | 854.78  | DELZ=  | 4.063  | ALP=453.03 | ALPHI=451.90 |
| *PARTBN*                         | TIME=108.50 | IS=2 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 858.02  | AINCHI=  | 854.78  | DELZ=  | 3.237  | ALP=453.05 | ALPHI=452.17 |
| *PARTBN*                         | TIME=108.50 | IS=3 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 858.18  | AINCHI=  | 854.78  | DELZ=  | 3.394  | ALP=453.05 | ALPHI=452.12 |
| *PARTBN*                         | TIME=108.50 | IS=4 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 859.07  | AINCHI=  | 854.78  | DELZ=  | 4.288  | ALP=453.03 | ALPHI=451.84 |
| *PARTBN*                         | TIME=108.50 | IS=5 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.13  | AINCHI=  | 854.78  | DELZ=  | 5.351  | ALP=453.00 | ALPHI=451.50 |
| *PARTBN*                         | TIME=108.50 | IS=6 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.44  | AINCHI=  | 854.78  | DELZ=  | 5.659  | ALP=452.99 | ALPHI=451.40 |
| *PARTBN*                         | TIME=108.50 | IS=7 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.38  | AINCHI=  | 854.78  | DELZ=  | 5.599  | ALP=452.99 | ALPHI=451.42 |
| *PARTBN*                         | TIME=108.50 | IS=8 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 860.02  | AINCHI=  | 854.78  | DELZ=  | 5.239  | ALP=453.00 | ALPHI=451.54 |
| WEB BURNOUT INCREMENT LOCATION = |             |      |             | 854.7810 | SECTOR NO. 2 |        | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 108.50 |            |              |
| *PARTBN*                         | TIME=109.00 | IS=2 | ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 854.41  | AINCHI=  | 839.83  | DELZ=  | 14.580 | ALP=453.14 | ALPHI=452.27 |
| *PARTBN*                         | TIME=109.00 | IS=3 | ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 855.13  | AINCHI=  | 839.83  | DELZ=  | 15.300 | ALP=453.14 | ALPHI=452.17 |
| *PARTBN*                         | TIME=109.00 | IS=1 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 855.53  | AINCHI=  | 854.78  | DELZ=  | .746   | ALP=453.12 | ALPHI=452.96 |
| *PARTBN*                         | TIME=109.00 | IS=4 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 855.75  | AINCHI=  | 854.78  | DELZ=  | .972   | ALP=453.11 | ALPHI=452.89 |
| *PARTBN*                         | TIME=109.00 | IS=5 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 856.82  | AINCHI=  | 854.78  | DELZ=  | 2.043  | ALP=453.09 | ALPHI=452.55 |
| *PARTBN*                         | TIME=109.00 | IS=6 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 857.13  | AINCHI=  | 854.78  | DELZ=  | 2.353  | ALP=453.08 | ALPHI=452.45 |
| *PARTBN*                         | TIME=109.00 | IS=7 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 857.07  | AINCHI=  | 854.78  | DELZ=  | 2.292  | ALP=453.08 | ALPHI=452.47 |
| *PARTBN*                         | TIME=109.00 | IS=8 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 856.71  | AINCHI=  | 854.78  | DELZ=  | 1.930  | ALP=453.09 | ALPHI=452.59 |
| *PARTBN*                         | TIME=109.00 | IS=2 | ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 854.41  | AINCHI=  | 839.83  | DELZ=  | 14.580 | ALP=453.14 | ALPHI=452.27 |
| *PARTBN*                         | TIME=109.00 | IS=3 | ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 855.13  | AINCHI=  | 839.83  | DELZ=  | 15.300 | ALP=453.14 | ALPHI=452.17 |
| *PARTBN*                         | TIME=109.00 | IS=1 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 855.53  | AINCHI=  | 854.78  | DELZ=  | .746   | ALP=453.12 | ALPHI=452.96 |
| *PARTBN*                         | TIME=109.00 | IS=4 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 855.75  | AINCHI=  | 854.78  | DELZ=  | .972   | ALP=453.11 | ALPHI=452.89 |
| *PARTBN*                         | TIME=109.00 | IS=5 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 856.82  | AINCHI=  | 854.78  | DELZ=  | 2.043  | ALP=453.09 | ALPHI=452.55 |
| *PARTBN*                         | TIME=109.00 | IS=6 | ZCALC( 66)= | 869.78   | ZCALC( 65)=  | 854.78 | AINCW= | 857.13  | AINCHI=  | 854.78  | DELZ=  | 2.353  | ALP=453.08 | ALPHI=452.45 |

• PARTUN TIME=109.00 IS=7 ZCALC( 66)= 869.78 ZCALC( 65)= 854.78 AINCW= 857.07 AINCHI= 854.78 DELZ= 2.292 ALP=453.08 ALPHI=452.47  
 • PARTUN TIME=109.00 IS=8 ZCALC( 56)= 869.78 ZCALC( 65)= 854.78 AINCW= 856.71 AINCHI= 854.78 DELZ= 1.930 ALP=453.09 ALPHI=452.59

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IGNITION TIME, TIME (S)

109.00000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 8515351.4     | 1914327.2    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 8525373.0     | 1916584.8    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 67386.318     | 15149.047    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SNMOTI               | .11908380+10  | .26771164+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TIISP                | 255.67137     | 255.67137    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SNMVTI               | .12407956+10  | .27894196+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6284146     | 1.6284146    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | NDOT                 | 3364.0703     | 7416.5497    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SNDOTN               | 488534.91     | 1077035.1    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIIF                 | 36.165748     | 79.731827    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 192.25982     | 423.86035    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 219.21157     | 339778.62    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 11.164222     | 681282.61    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 17093.826     | 37685.436    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 1160.3104     | 2558.0465    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1596087     | 1.1596087    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.818739     | 28.260483    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1557.2734     | 5109.1647    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .92101819-01  | .92101819-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .33289543+09  | 482.82400    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .51609041+11  | 74852.586    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | ANH                  | 2.3518337     | 3645.3495    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .85309732-02  | .33586509    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | 1.0426683     | 41.049932    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .31844297     | 19432.582    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.785389     | 3343239.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3377.5972     | 6079.6749    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 216.85974     | 336133.27    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VECYL                | 10.843813     | 661730.05    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 276.95991     | 16901130.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .32752695+09  | 475.03768    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .49221100+11  | 71389.170    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(N+1,1)           | .85192471-02  | .33540343    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(N+2,1)           | .85117428-02  | .33510799    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(N+1,1)          | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(N+2,1)          | .52501800     | 20.673000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(N+2,3)          | 3376.2561     | 6077.2609    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.5984622     | 2477.6214    |
| EXPANSION RATIO                                                 | EPR                  | 6.7242847     | 6.7242847    |
| PRESSURE RATIO                                                  | PEPO                 | .23479633-01  | .23479633-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37812250-01  | .37812250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLOPS               | 2.0000000     | 2.0000000    |

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INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | PSIA   | P      | PSIA   | DEG, °  | T      | U    | FT/SEC | M        | LP      | INCHES | SQ. IN. | WDOT<br>LB/SEC | DWDOT<br>LB/SEC | OW/DT<br>LB/SEC | RB<br>IN/SEC | TAU<br>IN. | RBTO<br>IN/SEC | TAUTO<br>IN. |
|-----------------------------|--------|--------|--------|--------|---------|--------|------|--------|----------|---------|--------|---------|----------------|-----------------|-----------------|--------------|------------|----------------|--------------|
| FOUR                        | 482.82 | 482.82 | 482.82 | 482.82 | 6079.67 | 3.66   | .001 | 438.26 | 15282.10 | 81.38   | 27.60  | -3.78   | .3355          | 41.050          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 15.000                      | 482.82 | 482.82 | 482.82 | 482.82 | 6079.67 | 9.96   | .003 | 438.53 | 15301.21 | 221.36  | 139.98 | -0.00   | .3355          | 41.005          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 30.000                      | 482.82 | 482.82 | 482.82 | 482.82 | 6079.67 | 16.25  | .005 | 438.79 | 15323.19 | 361.44  | 140.07 | -0.00   | .3355          | 41.000          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 45.000                      | 482.82 | 482.82 | 482.82 | 482.82 | 6079.66 | 22.52  | .006 | 439.06 | 15339.13 | 501.61  | 140.16 | -0.00   | .3355          | 40.996          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 60.000                      | 482.81 | 482.79 | 482.79 | 482.79 | 6079.64 | 28.79  | .008 | 439.32 | 15358.04 | 641.87  | 140.26 | -0.00   | .3356          | 40.991          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 75.000                      | 482.80 | 482.78 | 482.78 | 482.78 | 6079.63 | 35.04  | .010 | 439.59 | 15376.90 | 782.22  | 140.35 | -0.00   | .3356          | 40.986          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 90.000                      | 482.80 | 482.76 | 482.76 | 482.76 | 6079.61 | 41.28  | .012 | 439.85 | 15395.72 | 922.67  | 140.44 | -0.00   | .3356          | 40.981          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 105.000                     | 482.78 | 482.73 | 482.73 | 482.73 | 6079.59 | 47.52  | .013 | 440.12 | 15414.50 | 1063.21 | 140.54 | -0.00   | .3356          | 40.976          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 115.761                     | 482.77 | 482.71 | 482.71 | 482.71 | 6079.57 | 52.40  | .015 | 440.33 | 15429.20 | 1173.47 | 110.26 | -0.00   | .3356          | 40.970          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 116.771                     | 482.77 | 482.69 | 482.69 | 482.69 | 6079.54 | 59.28  | .017 | 440.90 | 15437.56 | 1173.47 | .00    | -0.00   | .3356          | 40.971          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 131.771                     | 482.76 | 482.69 | 482.69 | 482.69 | 6079.56 | 55.41  | .016 | 440.39 | 15493.97 | 1173.74 | .03    | -0.27   | .3356          | 40.971          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 143.919                     | 482.75 | 482.68 | 482.68 | 482.68 | 6079.55 | 55.98  | .016 | 439.47 | 15369.64 | 1248.81 | 75.03  | -0.07   | .3356          | 40.964          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 158.919                     | 482.73 | 482.65 | 482.65 | 482.65 | 6079.52 | 62.05  | .018 | 440.21 | 15427.77 | 1389.30 | 140.49 | -0.00   | .3356          | 40.958          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 173.919                     | 482.71 | 482.61 | 482.61 | 482.61 | 6079.49 | 68.08  | .019 | 440.94 | 15485.60 | 1530.06 | 140.75 | -0.00   | .3357          | 40.952          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 188.919                     | 482.70 | 482.57 | 482.57 | 482.57 | 6079.46 | 74.09  | .021 | 441.68 | 15543.14 | 1671.07 | 141.01 | -0.00   | .3357          | 40.946          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 203.919                     | 482.67 | 482.53 | 482.53 | 482.53 | 6079.42 | 80.06  | .023 | 442.42 | 15600.39 | 1812.34 | 141.26 | -0.01   | .3358          | 40.940          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 218.919                     | 482.65 | 482.48 | 482.48 | 482.48 | 6079.39 | 86.01  | .024 | 443.16 | 15657.35 | 1953.26 | 141.52 | -0.01   | .3358          | 40.934          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 233.919                     | 482.63 | 482.44 | 482.44 | 482.44 | 6079.35 | 91.93  | .026 | 443.89 | 15714.02 | 2095.64 | 141.78 | -0.01   | .3359          | 40.927          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 248.919                     | 482.60 | 482.38 | 482.38 | 482.38 | 6079.30 | 97.82  | .028 | 444.63 | 15770.45 | 2237.68 | 142.03 | -0.01   | .3359          | 40.921          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 263.919                     | 482.57 | 482.33 | 482.33 | 482.33 | 6079.26 | 103.68 | .029 | 445.37 | 15826.48 | 2379.97 | 142.29 | -0.01   | .3360          | 40.914          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 278.919                     | 482.54 | 482.27 | 482.27 | 482.27 | 6079.21 | 109.51 | .031 | 446.10 | 15882.28 | 2522.53 | 142.55 | -0.01   | .3361          | 40.908          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 293.919                     | 482.51 | 482.21 | 482.21 | 482.21 | 6079.16 | 115.33 | .033 | 446.84 | 15937.79 | 2665.35 | 142.82 | -0.01   | .3361          | 40.901          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 308.919                     | 482.48 | 482.15 | 482.15 | 482.15 | 6079.10 | 121.11 | .034 | 447.58 | 15993.00 | 2808.45 | 143.07 | -0.01   | .3362          | 40.894          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 323.919                     | 482.44 | 482.08 | 482.08 | 482.08 | 6079.05 | 126.88 | .036 | 448.31 | 16047.92 | 2951.81 | 143.36 | -0.01   | .3363          | 40.888          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 338.919                     | 482.40 | 482.01 | 482.01 | 482.01 | 6078.99 | 132.62 | .038 | 449.05 | 16102.56 | 3095.45 | 143.63 | -0.01   | .3364          | 40.881          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 353.919                     | 482.36 | 481.93 | 481.93 | 481.93 | 6078.93 | 138.33 | .039 | 449.79 | 16156.90 | 3239.35 | 143.89 | -0.01   | .3364          | 40.874          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 368.919                     | 482.32 | 481.86 | 481.86 | 481.86 | 6078.86 | 144.03 | .041 | 450.53 | 16210.99 | 3383.92 | 144.16 | -0.01   | .3365          | 40.866          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 383.919                     | 482.28 | 481.78 | 481.78 | 481.78 | 6078.80 | 149.71 | .043 | 451.26 | 16264.71 | 3527.97 | 144.43 | -0.01   | .3366          | 40.859          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 398.919                     | 482.24 | 481.69 | 481.69 | 481.69 | 6078.73 | 155.36 | .044 | 452.00 | 16318.18 | 3672.68 | 144.70 | -0.01   | .3367          | 40.852          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 413.048                     | 482.22 | 481.67 | 481.67 | 481.67 | 6078.71 | 156.92 | .045 | 452.20 | 16332.85 | 3712.56 | 39.88  | -0.00   | .3367          | 40.844          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 418.048                     | 482.18 | 481.58 | 481.58 | 481.58 | 6078.63 | 163.00 | .046 | 452.41 | 16309.90 | 3857.57 | 145.00 | -0.01   | .3370          | 40.843          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 427.051                     | 482.16 | 481.53 | 481.53 | 481.53 | 6078.58 | 167.15 | .047 | 452.53 | 16296.27 | 3944.71 | 87.13  | -0.01   | .3372          | 40.838          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 427.061                     | 482.14 | 481.51 | 481.51 | 481.51 | 6078.52 | 192.87 | .055 | 452.36 | 14128.79 | 3944.71 | .00    | -0.00   | .3371          | 40.863          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 442.061                     | 482.09 | 481.31 | 481.31 | 481.31 | 6078.31 | 186.79 | .053 | 452.96 | 14589.87 | 3945.08 | .00    | -0.00   | .3361          | 40.859          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 457.061                     | 482.02 | 481.27 | 481.27 | 481.27 | 6078.37 | 182.82 | .052 | 452.44 | 15073.83 | 3988.90 | 43.64  | -0.18   | .3354          | 40.829          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 463.204                     | 481.98 | 481.23 | 481.23 | 481.23 | 6078.37 | 182.57 | .052 | 452.16 | 15278.64 | 4037.31 | 48.38  | -0.02   | .3351          | 40.787          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 478.204                     | 481.93 | 481.13 | 481.13 | 481.13 | 6078.29 | 180.41 | .053 | 452.73 | 15320.75 | 4177.16 | 139.85 | -0.00   | .3352          | 40.766          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 493.204                     | 481.87 | 481.02 | 481.02 | 481.02 | 6078.20 | 194.24 | .055 | 453.31 | 15362.66 | 4317.22 | 140.05 | -0.01   | .3352          | 40.756          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 508.204                     | 481.81 | 480.91 | 480.91 | 480.91 | 6078.11 | 200.05 | .057 | 453.88 | 15404.36 | 4457.47 | 140.24 | -0.01   | .3352          | 40.746          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 523.204                     | 481.75 | 480.80 | 480.80 | 480.80 | 6078.02 | 205.84 | .058 | 454.45 | 15445.85 | 4597.91 | 140.44 | -0.01   | .3352          | 40.736          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 538.204                     | 481.69 | 480.68 | 480.68 | 480.68 | 6077.92 | 211.62 | .060 | 455.03 | 15487.13 | 4738.55 | 140.63 | -0.01   | .3353          | 40.726          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 553.204                     | 481.62 | 480.56 | 480.56 | 480.56 | 6077.83 | 217.39 | .062 | 455.60 | 15528.23 | 4879.39 | 140.83 | -0.01   | .3353          | 40.715          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 568.204                     | 481.56 | 480.44 | 480.44 | 480.44 | 6077.73 | 223.14 | .063 | 456.17 | 15569.06 | 5020.42 | 141.02 | -0.01   | .3353          | 40.705          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 583.204                     | 481.49 | 480.31 | 480.31 | 480.31 | 6077.63 | 228.87 | .065 | 456.75 | 15609.71 | 5161.65 | 141.22 | -0.01   | .3354          | 40.694          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 598.204                     | 481.42 | 480.16 | 480.16 | 480.16 | 6077.52 | 234.60 | .067 | 457.32 | 15650.16 | 5303.37 | 141.41 | -0.01   | .3354          | 40.684          | .0000           | .0000        | .0000      | .0000          | .0000        |
| 613.204                     | 481.35 | 480.05 | 480.05 | 480.05 | 6077.42 | 240.31 | .068 | 457.89 | 15690.37 | 5444.68 | 141.61 | -0.01   | .3354          | 40.673          | .0000           | .0000        | .0000      | .0000          | .0000        |

|          |        |        |         |        |      |        |          |         |        |      |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|------|-------|--------|-------|------|
| 628.204  | 481.27 | 479.91 | 6077.31 | 246.30 | .070 | 444.47 | 15730.41 | 5586.49 | 141.80 | -.01 | .3354 | 40.662 | .0000 | .000 |
| 643.204  | 481.20 | 479.78 | 6077.23 | 251.69 | .071 | 445.64 | 15773.23 | 5728.50 | 142.03 | -.01 | .3355 | 40.651 | .0000 | .000 |
| 658.204  | 481.12 | 479.63 | 6077.09 | 257.36 | .073 | 445.62 | 15809.83 | 5870.72 | 142.21 | -.01 | .3356 | 40.640 | .0000 | .000 |
| 673.204  | 481.04 | 479.49 | 6076.97 | 263.02 | .075 | 446.19 | 15849.23 | 6013.15 | 142.42 | -.01 | .3356 | 40.629 | .0000 | .000 |
| 688.204  | 480.96 | 479.34 | 6076.85 | 268.68 | .076 | 446.76 | 15888.41 | 6155.79 | 142.63 | -.01 | .3357 | 40.618 | .0000 | .000 |
| 703.204  | 480.88 | 479.19 | 6076.73 | 274.32 | .078 | 447.34 | 15927.39 | 6298.63 | 142.83 | -.01 | .3357 | 40.608 | .0000 | .000 |
| 718.204  | 480.79 | 479.04 | 6076.61 | 279.95 | .079 | 447.91 | 15966.16 | 6441.68 | 143.04 | -.01 | .3358 | 40.597 | .0000 | .000 |
| 733.204  | 480.71 | 478.95 | 6076.54 | 285.58 | .080 | 448.21 | 15986.71 | 6517.93 | 143.24 | -.01 | .3358 | 40.585 | .0000 | .000 |
| 748.204  | 480.64 | 478.79 | 6076.46 | 291.21 | .081 | 450.20 | 16129.01 | 6661.56 | 143.62 | -.01 | .3361 | 40.580 | .0000 | .000 |
| 763.204  | 480.50 | 478.74 | 6076.43 | 296.82 | .082 | 450.88 | 16177.32 | 6710.99 | 143.83 | -.00 | .3361 | 40.574 | .0000 | .000 |
| 778.204  | 480.37 | 478.26 | 6075.64 | 302.41 | .091 | 450.87 | 16220.65 | 6710.99 | .00    | -.00 | .3361 | 40.624 | .0000 | .000 |
| 793.204  | 480.24 | 478.26 | 6075.89 | 308.00 | .088 | 451.53 | 16267.02 | 6711.42 | .00    | -.43 | .3360 | 40.624 | .0000 | .000 |
| 808.204  | 480.13 | 478.16 | 6076.11 | 313.59 | .086 | 452.18 | 16316.39 | 6711.70 | .00    | -.28 | .3359 | 40.599 | .0000 | .000 |
| 823.204  | 480.09 | 478.13 | 6076.25 | 319.18 | .084 | 452.88 | 16364.93 | 6713.18 | 81.35  | -.13 | .3358 | 40.569 | .0000 | .000 |
| 838.204  | 479.99 | 477.96 | 6076.14 | 324.77 | .085 | 449.86 | 16314.36 | 6624.22 | 31.04  | -.01 | .3357 | 40.532 | .0000 | .000 |
| 853.204  | 479.89 | 477.79 | 6076.02 | 330.36 | .087 | 450.84 | 16173.75 | 6711.86 | 143.61 | -.02 | .3359 | 40.527 | .0000 | .000 |
| 868.204  | 479.78 | 477.62 | 6075.90 | 335.95 | .088 | 451.81 | 16242.51 | 7256.26 | 144.37 | -.03 | .3362 | 40.507 | .0000 | .000 |
| 883.204  | 479.68 | 477.45 | 6075.77 | 341.54 | .090 | 452.78 | 16316.39 | 7400.38 | 144.25 | -.14 | .3364 | 40.497 | .0000 | .000 |
| 898.204  | 479.57 | 477.43 | 6075.76 | 347.13 | .090 | 453.82 | 16300.91 | 7412.86 | 12.45  | -.04 | .3364 | 39.794 | .0000 | .000 |
| 913.204  | 479.48 | 477.43 | 6075.74 | 352.72 | .090 | .00    | 16261.11 | 7412.93 | .00    | -.06 | .3364 | 39.025 | .0000 | .000 |
| 928.204  | 479.39 | 477.43 | 6075.73 | 358.31 | .090 | .00    | 16236.30 | 7413.02 | .00    | -.09 | .3364 | 38.255 | .0000 | .000 |
| 943.204  | 479.30 | 477.43 | 6075.71 | 363.90 | .090 | .00    | 16211.38 | 7413.13 | .00    | -.11 | .3364 | 37.486 | .0000 | .000 |
| 958.204  | 479.21 | 477.43 | 6075.70 | 369.49 | .091 | .00    | 16186.36 | 7413.27 | .00    | -.14 | .3364 | 36.717 | .0000 | .000 |
| 973.204  | 479.12 | 477.43 | 6075.69 | 375.08 | .091 | .00    | 16161.22 | 7413.43 | .00    | -.16 | .3364 | 35.948 | .0000 | .000 |
| 988.204  | 479.03 | 477.43 | 6075.68 | 380.67 | .091 | .00    | 16135.98 | 7413.60 | .00    | -.18 | .3364 | 35.178 | .0000 | .000 |
| 1003.204 | 478.94 | 477.43 | 6075.66 | 386.26 | .091 | .00    | 16110.63 | 7413.83 | .00    | -.20 | .3364 | 34.409 | .0000 | .000 |
| 1018.204 | 478.85 | 477.43 | 6075.65 | 391.85 | .091 | .00    | 16085.17 | 7414.02 | .00    | -.22 | .3364 | 33.640 | .0000 | .000 |
| 1033.204 | 478.76 | 477.43 | 6075.64 | 397.44 | .091 | .00    | 16059.60 | 7414.25 | .00    | -.23 | .3364 | 32.871 | .0000 | .000 |
| 1048.204 | 478.67 | 477.43 | 6075.62 | 403.03 | .092 | .00    | 16034.03 | 7414.50 | .00    | -.25 | .3364 | 32.101 | .0000 | .000 |
| 1063.204 | 478.58 | 477.43 | 6075.60 | 408.62 | .092 | .00    | 16008.46 | 7414.77 | .00    | -.27 | .3364 | 31.332 | .0000 | .000 |
| 1078.204 | 478.49 | 477.43 | 6075.59 | 414.21 | .092 | .00    | 15997.77 | 7414.88 | .00    | -.28 | .3364 | 30.563 | .0000 | .000 |
| 1093.204 | 478.40 | 477.43 | 6075.58 | 419.80 | .092 | .00    | 15969.84 | 7415.17 | .00    | -.28 | .3364 | 29.794 | .0000 | .000 |
| 1108.204 | 478.31 | 477.43 | 6075.56 | 425.39 | .092 | .00    | 15941.80 | 7415.45 | .00    | -.28 | .3364 | 29.025 | .0000 | .000 |
| 1123.204 | 478.22 | 477.43 | 6075.55 | 430.98 | .092 | .00    | 15916.64 | 7415.70 | .00    | -.25 | .3364 | 28.255 | .0000 | .000 |
| 1138.204 | 478.13 | 477.43 | 6075.54 | 436.57 | .285 | .0000  | 15823.73 | 7416.55 | .00    | -.52 | .3354 | 29.460 | .0000 | .000 |
| 1153.204 | 478.04 | 477.43 | 6075.53 | 442.16 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1168.204 | 477.95 | 477.43 | 6075.52 | 447.75 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1183.204 | 477.86 | 477.43 | 6075.51 | 453.34 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1198.204 | 477.77 | 477.43 | 6075.50 | 458.93 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1213.204 | 477.68 | 477.43 | 6075.49 | 464.52 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1228.204 | 477.59 | 477.43 | 6075.48 | 470.11 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1243.204 | 477.50 | 477.43 | 6075.47 | 475.70 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1258.204 | 477.41 | 477.43 | 6075.46 | 481.29 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1273.204 | 477.32 | 477.43 | 6075.45 | 486.88 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1288.204 | 477.23 | 477.43 | 6075.44 | 492.47 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1303.204 | 477.14 | 477.43 | 6075.43 | 498.06 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1318.204 | 477.05 | 477.43 | 6075.42 | 503.65 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1333.204 | 476.96 | 477.43 | 6075.41 | 509.24 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1348.204 | 476.87 | 477.43 | 6075.40 | 514.83 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1363.204 | 476.78 | 477.43 | 6075.39 | 520.42 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1378.204 | 476.69 | 477.43 | 6075.38 | 526.01 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1393.204 | 476.60 | 477.43 | 6075.37 | 531.60 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1408.204 | 476.51 | 477.43 | 6075.36 | 537.19 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1423.204 | 476.42 | 477.43 | 6075.35 | 542.78 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1438.204 | 476.33 | 477.43 | 6075.34 | 548.37 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1453.204 | 476.24 | 477.43 | 6075.33 | 553.96 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1468.204 | 476.15 | 477.43 | 6075.32 | 559.55 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1483.204 | 476.06 | 477.43 | 6075.31 | 565.14 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1498.204 | 475.97 | 477.43 | 6075.30 | 570.73 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1513.204 | 475.88 | 477.43 | 6075.29 | 576.32 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1528.204 | 475.79 | 477.43 | 6075.28 | 581.91 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1543.204 | 475.70 | 477.43 | 6075.27 | 587.50 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1558.204 | 475.61 | 477.43 | 6075.26 | 593.09 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1573.204 | 475.52 | 477.43 | 6075.25 | 598.68 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1588.204 | 475.43 | 477.43 | 6075.24 | 604.27 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1603.204 | 475.34 | 477.43 | 6075.23 | 609.86 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1618.204 | 475.25 | 477.43 | 6075.22 | 615.45 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1633.204 | 475.16 | 477.43 | 6075.21 | 621.04 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1648.204 | 475.07 | 477.43 | 6075.20 | 626.63 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1663.204 | 474.98 | 477.43 | 6075.19 | 632.22 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1678.204 | 474.89 | 477.43 | 6075.18 | 637.81 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1693.204 | 474.80 | 477.43 | 6075.17 | 643.40 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1708.204 | 474.71 | 477.43 | 6075.16 | 648.99 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1723.204 | 474.62 | 477.43 | 6075.15 | 654.58 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1738.204 | 474.53 | 477.43 | 6075.14 | 660.17 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1753.204 | 474.44 | 477.43 | 6075.13 | 665.76 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1768.204 | 474.35 | 477.43 | 6075.12 | 671.35 | .060 | .0000  | 15823.73 | 7416.55 | .00    | -.33 | .3351 | 28.670 | .0000 | .000 |
| 1783.204 | 474.26 | 477.43 | 6075.11 | 676    |      |        |          |         |        |      |       |        |       |      |

|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+C2                            | 4.8277+C2  | 4.8271+C2 | 6.0796+C3   | 4.9115+C1   | 1.6460+C4     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1735+C3       |
| AFT     | 1.1677+C2                            | 4.8276+C2  | 4.8269+C2 | 6.0795+C3   | 4.9116+C1   | 1.6460+C4     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1735+C3       |

GAS BUILDUP IN SLOT, DW/DT = -1.9352-C4

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+C2 | 4.8216+C2 | 4.8153+C2 | 6.0786+C3 | 1.6626+C2 | 1.6383+C4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.9447+C3 |
| AFT     | 4.2706+C2 | 4.8193+C2 | 4.8131+C2 | 6.0782+C3 | 1.6633+C2 | 1.6383+C4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.9447+C3 |

GAS BUILDUP IN SLOT, DW/DT = -1.9279-C4

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+C2 | 4.8060+C2 | 4.7874+C2 | 6.0764+C3 | 2.8440+C2 | 1.6383+C4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7110+C3 |
| AFT     | 7.4635+C2 | 4.8012+C2 | 4.7826+C2 | 6.0756+C3 | 2.8465+C2 | 1.6383+C4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.7110+C3 |

GAS BUILDUP IN SLOT, DW/DT = -1.9430-C4

|                                       |          |              |        |        |         |          |         |        |        |            |              |
|---------------------------------------|----------|--------------|--------|--------|---------|----------|---------|--------|--------|------------|--------------|
| WEB BURNOUT INCREMENT LOCATION =      | 839.8310 | SECTOR NO. = | 2      | TAU =  | 40.7393 | TAUWDP = | 40.7393 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 1      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 3      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 4      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 5      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 6      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 7      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| WEB BURNOUT INCREMENT LOCATION =      | 854.7810 | SECTOR NO. = | 8      | TAU =  | 40.5630 | TAUWDP = | 40.5630 | TIME = | 109.00 |            |              |
| •PARTBN• TIME=109.50 IS=1 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 426.76  | AINCHI=  | 418.05  | DELZ=  | 8.716  | ALP=453.67 | ALPHI=452.97 |
| •PARTBN• TIME=109.50 IS=2 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 424.33  | AINCHI=  | 418.05  | DELZ=  | 6.284  | ALP=453.67 | ALPHI=453.18 |
| •PARTBN• TIME=109.50 IS=3 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 424.79  | AINCHI=  | 418.05  | DELZ=  | 6.743  | ALP=453.67 | ALPHI=453.14 |
| •PARTBN• TIME=109.50 IS=4 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 427.43  | AINCHI=  | 418.05  | DELZ=  | 9.383  | ALP=453.67 | ALPHI=453.28 |
| •PARTBN• TIME=109.50 IS=1 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 428.05  | DELZ=  | 14.540 | ALP= -4.42 | ALPHI=0.0000 |
| •PARTBN• TIME=109.50 IS=2 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 428.05  | DELZ=  | 13.886 | ALP= -4.42 | ALPHI=0.0000 |
| •PARTBN• TIME=109.50 IS=3 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 428.05  | DELZ=  | 14.010 | ALP= -4.25 | ALPHI=0.0000 |
| •PARTBN• TIME=109.50 IS=4 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 427.34  | DELZ=  | 14.719 | ALP= -3.19 | ALPHI=0.0000 |
| •PARTBN• TIME=109.50 IS=1 ZCALC( 64)= | 839.83   | ZCALC( 63)=  | 824.83 | AINCW= | 839.83  | AINCHI=  | 824.83  | DELZ=  | 14.467 | ALP=453.23 | ALPHI=452.36 |
| •PARTBN• TIME=109.50 IS=2 ZCALC( 64)= | 839.83   | ZCALC( 63)=  | 824.83 | AINCW= | 840.02  | AINCHI=  | 824.83  | DELZ=  | 15.188 | ALP=453.23 | ALPHI=452.31 |
| •PARTBN• TIME=109.50 IS=3 ZCALC( 64)= | 839.83   | ZCALC( 63)=  | 824.83 | AINCW= | 843.08  | AINCHI=  | 839.83  | DELZ=  | 3.252  | ALP=453.21 | ALPHI=453.06 |
| •PARTBN• TIME=109.50 IS=4 ZCALC( 64)= | 839.83   | ZCALC( 63)=  | 824.83 | AINCW= | 844.12  | AINCHI=  | 839.83  | DELZ=  | 4.289  | ALP=453.20 | ALPHI=452.99 |
| •PARTBN• TIME=109.50 IS=1 ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 849.03  | AINCHI=  | 839.83  | DELZ=  | 9.200  | ALP=453.17 | ALPHI=452.65 |
| •PARTBN• TIME=109.50 IS=2 ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 850.45  | AINCHI=  | 839.83  | DELZ=  | 10.624 | ALP=453.17 | ALPHI=452.55 |
| •PARTBN• TIME=109.50 IS=3 ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 850.18  | AINCHI=  | 839.83  | DELZ=  | 10.344 | ALP=453.17 | ALPHI=452.57 |
| •PARTBN• TIME=109.50 IS=4 ZCALC( 65)= | 854.78   | ZCALC( 64)=  | 839.83 | AINCW= | 850.51  | AINCHI=  | 839.83  | DELZ=  | 8.682  | ALP=453.18 | ALPHI=452.69 |
| •PARTBN• TIME=109.50 IS=1 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 426.76  | AINCHI=  | 418.05  | DELZ=  | 6.716  | ALP=453.67 | ALPHI=452.97 |
| •PARTBN• TIME=109.50 IS=2 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 424.33  | AINCHI=  | 418.05  | DELZ=  | 6.284  | ALP=453.67 | ALPHI=453.18 |
| •PARTBN• TIME=109.50 IS=3 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 424.79  | AINCHI=  | 418.05  | DELZ=  | 6.743  | ALP=453.67 | ALPHI=453.14 |
| •PARTBN• TIME=109.50 IS=4 ZCALC( 32)= | 427.05   | ZCALC( 31)=  | 418.05 | AINCW= | 427.43  | AINCHI=  | 418.05  | DELZ=  | 9.383  | ALP=453.67 | ALPHI=453.28 |
| •PARTBN• TIME=109.50 IS=1 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 428.05  | DELZ=  | 14.540 | ALP= -3.44 | ALPHI=0.0000 |
| •PARTBN• TIME=109.50 IS=2 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 428.05  | DELZ=  | 13.886 | ALP= -4.42 | ALPHI=0.0000 |
| •PARTBN• TIME=109.50 IS=3 ZCALC( 34)= | 442.06   | ZCALC( 33)=  | 427.06 | AINCW= | 442.06  | AINCHI=  | 428.05  | DELZ=  | 14.010 | ALP= -4.25 | ALPHI=0.0000 |



|                                  |             |            |             |        |             |          |         |        |         |        |       |        |      |        |        |        |
|----------------------------------|-------------|------------|-------------|--------|-------------|----------|---------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN*                         | TIME=109.50 | IS=4       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 427.34 | DELZ= | 14.719 | ALP= | -3.19  | ALPHI= | *****  |
| *PARTBN*                         | TIME=109.50 | IS=2       | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83   | AINCW=  | 839.30 | AINCHI= | 824.83 | DELZ= | 14.467 | ALP= | 453.23 | ALPHI= | 452.36 |
| *PARTBN*                         | TIME=109.50 | IS=3       | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83   | AINCW=  | 840.02 | AINCHI= | 824.83 | DELZ= | 15.188 | ALP= | 453.23 | ALPHI= | 452.31 |
| *PARTBN*                         | TIME=109.50 | IS=1       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 843.08 | AINCHI= | 839.83 | DELZ= | 3.252  | ALP= | 453.21 | ALPHI= | 453.05 |
| *PARTBN*                         | TIME=109.50 | IS=4       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 844.12 | AINCHI= | 839.83 | DELZ= | 4.289  | ALP= | 453.20 | ALPHI= | 452.99 |
| *PARTBN*                         | TIME=109.50 | IS=5       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 849.03 | AINCHI= | 839.83 | DELZ= | 9.200  | ALP= | 453.17 | ALPHI= | 452.65 |
| *PARTBN*                         | TIME=109.50 | IS=6       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 850.45 | AINCHI= | 839.83 | DELZ= | 10.624 | ALP= | 453.17 | ALPHI= | 452.55 |
| *PARTBN*                         | TIME=109.50 | IS=7       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 850.18 | AINCHI= | 839.83 | DELZ= | 10.344 | ALP= | 453.17 | ALPHI= | 452.57 |
| *PARTBN*                         | TIME=109.50 | IS=8       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 848.51 | AINCHI= | 839.83 | DELZ= | 8.682  | ALP= | 453.18 | ALPHI= | 452.69 |
| *PARTBN*                         | TIME=109.50 | IS=1       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 426.76 | AINCHI= | 418.05 | DELZ= | 8.716  | ALP= | 453.67 | ALPHI= | 452.97 |
| *PARTBN*                         | TIME=109.50 | IS=2       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 424.33 | AINCHI= | 418.05 | DELZ= | 6.284  | ALP= | 453.67 | ALPHI= | 453.18 |
| *PARTBN*                         | TIME=109.50 | IS=3       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 424.79 | AINCHI= | 418.05 | DELZ= | 6.743  | ALP= | 453.67 | ALPHI= | 453.14 |
| *PARTBN*                         | TIME=109.50 | IS=4       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 427.43 | AINCHI= | 418.05 | DELZ= | 9.383  | ALP= | 453.67 | ALPHI= | 453.28 |
| *PARTBN*                         | TIME=109.50 | IS=1       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 427.52 | DELZ= | 14.540 | ALP= | -3.44  | ALPHI= | *****  |
| *PARTBN*                         | TIME=109.50 | IS=2       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 428.18 | DELZ= | 13.886 | ALP= | -4.42  | ALPHI= | *****  |
| *PARTBN*                         | TIME=109.50 | IS=3       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 428.05 | DELZ= | 14.010 | ALP= | -4.25  | ALPHI= | *****  |
| *PARTBN*                         | TIME=109.50 | IS=4       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 427.34 | DELZ= | 14.719 | ALP= | -3.19  | ALPHI= | *****  |
| *PARTBN*                         | TIME=109.50 | IS=2       | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83   | AINCW=  | 839.30 | AINCHI= | 824.83 | DELZ= | 14.467 | ALP= | 453.23 | ALPHI= | 452.36 |
| *PARTBN*                         | TIME=109.50 | IS=3       | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83   | AINCW=  | 840.02 | AINCHI= | 824.83 | DELZ= | 15.188 | ALP= | 453.23 | ALPHI= | 452.31 |
| *PARTBN*                         | TIME=109.50 | IS=1       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 843.08 | AINCHI= | 839.83 | DELZ= | 3.252  | ALP= | 453.21 | ALPHI= | 453.05 |
| *PARTBN*                         | TIME=109.50 | IS=4       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 844.12 | AINCHI= | 839.83 | DELZ= | 4.289  | ALP= | 453.20 | ALPHI= | 452.99 |
| *PARTBN*                         | TIME=109.50 | IS=5       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 849.03 | AINCHI= | 839.83 | DELZ= | 9.200  | ALP= | 453.17 | ALPHI= | 452.65 |
| *PARTBN*                         | TIME=109.50 | IS=6       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 850.45 | AINCHI= | 839.83 | DELZ= | 10.624 | ALP= | 453.17 | ALPHI= | 452.55 |
| *PARTBN*                         | TIME=109.50 | IS=7       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 850.18 | AINCHI= | 839.83 | DELZ= | 10.344 | ALP= | 453.17 | ALPHI= | 452.57 |
| *PARTBN*                         | TIME=109.50 | IS=8       | ZCALC( 65)= | 854.78 | ZCALC( 64)= | 839.83   | AINCW=  | 848.51 | AINCHI= | 839.83 | DELZ= | 8.682  | ALP= | 453.18 | ALPHI= | 452.69 |
| WEB BURNOUT INCREMENT LOCATION = | 418.0480    | SECTOR NO. | 1           | TAU =  | 41.1922     | TAUWDP = | 41.1922 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 418.0480    | SECTOR NO. | 2           | TAU =  | 41.1922     | TAUWDP = | 41.1922 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 418.0480    | SECTOR NO. | 3           | TAU =  | 41.1922     | TAUWDP = | 41.1922 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 418.0480    | SECTOR NO. | 4           | TAU =  | 41.1922     | TAUWDP = | 41.1922 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 824.8310    | SECTOR NO. | 2           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 1           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 3           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 4           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 5           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 6           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 7           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION = | 839.8310    | SECTOR NO. | 8           | TAU =  | 40.7393     | TAUWDP = | 40.7393 | TIME = | 109.50  |        |       |        |      |        |        |        |
| *PARTBN*                         | TIME=110.00 | IS=1       | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05   | AINCW=  | 417.19 | AINCHI= | 403.05 | DELZ= | 14.143 | ALP= | 453.67 | ALPHI= | 453.06 |
| *PARTBN*                         | TIME=110.00 | IS=2       | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05   | AINCW=  | 414.83 | AINCHI= | 403.05 | DELZ= | 11.783 | ALP= | 453.67 | ALPHI= | 453.16 |
| *PARTBN*                         | TIME=110.00 | IS=3       | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05   | AINCW=  | 415.28 | AINCHI= | 403.05 | DELZ= | 12.230 | ALP= | 453.67 | ALPHI= | 453.15 |
| *PARTBN*                         | TIME=110.00 | IS=4       | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05   | AINCW=  | 417.84 | AINCHI= | 403.05 | DELZ= | 14.791 | ALP= | 453.67 | ALPHI= | 453.04 |
| *PARTBN*                         | TIME=110.00 | IS=5       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 420.97 | AINCHI= | 418.05 | DELZ= | 2.926  | ALP= | 453.67 | ALPHI= | 453.46 |
| *PARTBN*                         | TIME=110.00 | IS=6       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 421.90 | AINCHI= | 418.05 | DELZ= | 3.848  | ALP= | 453.67 | ALPHI= | 453.39 |
| *PARTBN*                         | TIME=110.00 | IS=7       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 421.71 | AINCHI= | 418.05 | DELZ= | 3.667  | ALP= | 453.67 | ALPHI= | 453.40 |
| *PARTBN*                         | TIME=110.00 | IS=8       | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05   | AINCW=  | 423.64 | AINCHI= | 418.05 | DELZ= | 2.595  | ALP= | 453.67 | ALPHI= | 453.49 |
| *PARTBN*                         | TIME=110.00 | IS=1       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 430.10 | DELZ= | 11.957 | ALP= | -7.58  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=2       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 430.76 | DELZ= | 11.302 | ALP= | -8.58  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=3       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 430.63 | DELZ= | 11.427 | ALP= | -8.40  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=4       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 429.92 | DELZ= | 12.137 | ALP= | -7.32  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=5       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 429.09 | DELZ= | 12.977 | ALP= | -6.03  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=6       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 428.84 | DELZ= | 13.225 | ALP= | -5.63  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=7       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 428.68 | DELZ= | 13.177 | ALP= | -5.71  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=8       | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06   | AINCW=  | 442.06 | AINCHI= | 429.17 | DELZ= | 12.889 | ALP= | -6.16  | ALPHI= | *****  |
| *PARTBN*                         | TIME=110.00 | IS=2       | ZCALC( 63)= | 824.83 | ZCALC( 62)= | 809.83   | AINCW=  | 824.25 | AINCHI= | 809.83 | DELZ= | 14.418 | ALP= | 453.32 | ALPHI= | 452.45 |
| *PARTBN*                         | TIME=110.00 | IS=3       | ZCALC( 63)= | 824.83 | ZCALC( 62)= | 809.83   | AINCW=  | 824.97 | AINCHI= | 809.83 | DELZ= | 15.140 | ALP= | 453.32 | ALPHI= | 452.40 |

|          |             |      |             |        |             |        |        |        |         |        |       |        |            |              |
|----------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------------|--------------|
| •PARTBN• | TIME=110.00 | IS=1 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 829.04 | AINCHI= | 824.83 | DELZ= | 3.214  | ALP=453.30 | ALPHI=453.16 |
| •PARTBN• | TIME=110.00 | IS=4 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 829.09 | AINCHI= | 824.83 | DELZ= | 4.255  | ALP=453.29 | ALPHI=453.09 |
| •PARTBN• | TIME=110.00 | IS=5 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 834.01 | AINCHI= | 824.83 | DELZ= | 9.181  | ALP=453.26 | ALPHI=452.74 |
| •PARTBN• | TIME=110.00 | IS=6 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 835.44 | AINCHI= | 824.83 | DELZ= | 10.613 | ALP=453.26 | ALPHI=452.64 |
| •PARTBN• | TIME=110.00 | IS=7 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 835.16 | AINCHI= | 824.83 | DELZ= | 10.332 | ALP=453.26 | ALPHI=452.66 |
| •PARTBN• | TIME=110.00 | IS=8 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 833.49 | AINCHI= | 824.83 | DELZ= | 8.663  | ALP=453.27 | ALPHI=452.77 |
| •PARTBN• | TIME=110.00 | IS=1 | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05 | AINCW= | 417.19 | AINCHI= | 403.05 | DELZ= | 14.143 | ALP=453.67 | ALPHI=453.06 |
| •PARTBN• | TIME=110.00 | IS=2 | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05 | AINCW= | 414.83 | AINCHI= | 403.05 | DELZ= | 11.783 | ALP=453.67 | ALPHI=453.16 |
| •PARTBN• | TIME=110.00 | IS=3 | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05 | AINCW= | 415.28 | AINCHI= | 403.05 | DELZ= | 12.230 | ALP=453.67 | ALPHI=453.15 |
| •PARTBN• | TIME=110.00 | IS=4 | ZCALC( 31)= | 418.05 | ZCALC( 30)= | 403.05 | AINCW= | 417.84 | AINCHI= | 403.05 | DELZ= | 14.791 | ALP=453.67 | ALPHI=453.04 |
| •PARTBN• | TIME=110.00 | IS=5 | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05 | AINCW= | 420.97 | AINCHI= | 418.05 | DELZ= | 2.926  | ALP=453.67 | ALPHI=453.46 |
| •PARTBN• | TIME=110.00 | IS=6 | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05 | AINCW= | 421.90 | AINCHI= | 418.05 | DELZ= | 3.848  | ALP=453.67 | ALPHI=453.39 |
| •PARTBN• | TIME=110.00 | IS=7 | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05 | AINCW= | 421.71 | AINCHI= | 418.05 | DELZ= | 3.667  | ALP=453.67 | ALPHI=453.40 |
| •PARTBN• | TIME=110.00 | IS=8 | ZCALC( 32)= | 427.05 | ZCALC( 31)= | 418.05 | AINCW= | 420.64 | AINCHI= | 418.05 | DELZ= | 2.595  | ALP=453.67 | ALPHI=453.49 |
| •PARTBN• | TIME=110.00 | IS=1 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 430.10 | DELZ= | 11.757 | ALP=       | -7.58        |
| •PARTBN• | TIME=110.00 | IS=2 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 430.76 | DELZ= | 11.302 | ALP=       | -8.58        |
| •PARTBN• | TIME=110.00 | IS=3 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 430.63 | DELZ= | 11.427 | ALP=       | -8.40        |
| •PARTBN• | TIME=110.00 | IS=4 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 429.92 | DELZ= | 12.137 | ALP=       | -7.32        |
| •PARTBN• | TIME=110.00 | IS=5 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 429.08 | DELZ= | 12.977 | ALP=       | -6.03        |
| •PARTBN• | TIME=110.00 | IS=6 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 428.84 | DELZ= | 13.225 | ALP=       | -5.63        |
| •PARTBN• | TIME=110.00 | IS=7 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 428.88 | DELZ= | 13.177 | ALP=       | -5.71        |
| •PARTBN• | TIME=110.00 | IS=8 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 429.17 | DELZ= | 12.889 | ALP=       | -6.16        |
| •PARTBN• | TIME=110.00 | IS=2 | ZCALC( 58)= | 746.35 | ZCALC( 57)= | 746.35 | AINCW= | 746.35 | AINCHI= | 746.55 | DELZ= | 14.793 | ALP=       | ALPHI=       |
| •PARTBN• | TIME=110.00 | IS=2 | ZCALC( 63)= | 824.83 | ZCALC( 62)= | 809.83 | AINCW= | 824.25 | AINCHI= | 809.83 | DELZ= | 14.418 | ALP=453.32 | ALPHI=452.45 |
| •PARTBN• | TIME=110.00 | IS=3 | ZCALC( 63)= | 824.83 | ZCALC( 62)= | 809.83 | AINCW= | 824.97 | AINCHI= | 809.83 | DELZ= | 15.140 | ALP=453.32 | ALPHI=452.40 |
| •PARTBN• | TIME=110.00 | IS=1 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 828.04 | AINCHI= | 824.83 | DELZ= | 3.214  | ALP=453.30 | ALPHI=453.16 |
| •PARTBN• | TIME=110.00 | IS=4 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 829.09 | AINCHI= | 824.83 | DELZ= | 4.255  | ALP=453.29 | ALPHI=453.09 |
| •PARTBN• | TIME=110.00 | IS=5 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 834.01 | AINCHI= | 824.83 | DELZ= | 9.181  | ALP=453.26 | ALPHI=452.74 |
| •PARTBN• | TIME=110.00 | IS=6 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 835.44 | AINCHI= | 824.83 | DELZ= | 10.613 | ALP=453.26 | ALPHI=452.64 |
| •PARTBN• | TIME=110.00 | IS=7 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 835.16 | AINCHI= | 824.83 | DELZ= | 10.332 | ALP=453.26 | ALPHI=452.66 |
| •PARTBN• | TIME=110.00 | IS=8 | ZCALC( 64)= | 839.83 | ZCALC( 63)= | 824.83 | AINCW= | 833.49 | AINCHI= | 824.83 | DELZ= | 8.663  | ALP=453.27 | ALPHI=452.77 |



IGNITION TIME, TIME (S)

110.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 8200965.1     | 1843650.3    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 8213228.6     | 1845732.8    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 65992.760     | 14835.763    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)        | SRNDT                | .11992282*10  | .26959722*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 255.70674     | 255.70674    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)           | SRMVT                | .12491955*10  | .28083531*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6285779     | 1.6285779    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 3230.6856     | 7140.3796    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 491848.11     | 1084339.5    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | WIF                  | 35.417836     | 78.082462    |
| INERT MASS REMAINING (KG,LBM)              | WIR                  | 156.50624     | 345.03721    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 209.71502     | 325058.93    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 9.2854309     | 566630.41    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 13805.435     | 30435.775    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1121.8775     | 2473.3165    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1595915     | 1.1595915    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.814433     | 28.250988    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1556.9505     | 5108.1054    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94866085-01  | .94866085-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .32042606*09  | 464.73872    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPHDT                | .51936952*11  | 75328.182    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 2.1823143     | 3382.5939    |
| BURN RATE (M/S,IN/S)                       | KBZ(1)               | .84233788-02  | .33162909    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.0511836     | 41.385181    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .29918215     | 18257.215    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.804653     | 3344384.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3374.4824     | 6074.5683    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 207.53271     | 321676.34    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VCYL                 | 849842606     | 548253.22    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 278.34819     | 16985849.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .31525142*09  | 457.23354    |
| PRESSURE INTEGRAL (N·S/M**2,LBF·S/IN**2)   | SPONDT               | .49543716*11  | 71857.086    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .30000000     | .30000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .84361074-02  | .33094911    |
| BURN RATE, REGION B (M/S,IN/SEC)           | KBZ(NI+2,1)          | .83986978-02  | .33065740    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828408     | 29.460300    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.347463     | 1240300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3373.1848     | 6071.7416    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5991517     | 2478.6961    |
| EXPANSION RATIO                            | EPR                  | 6.7213855     | 6.7213855    |
| PRESSURE RATIO                             | PEPO                 | .23493924-01  | .23493924-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN-RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | AILUPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDOT  | DN/DT  | RB     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE                        | 464.74 | 464.74 | 6074.07 | 4.27   | .001 | 440.37 | 15429.30 | 92.20   | 71.08  | -21.12 | .3312  | 41.385 | .0000  | .000  |
| 15.000                      | 464.74 | 464.74 | 6074.06 | 13.75  | .003 | 440.64 | 15448.42 | 232.27  | 138.86 | -1.21  | .3312  | 41.340 | .0000  | .000  |
| 30.000                      | 464.74 | 464.73 | 6074.06 | 17.22  | .005 | 440.90 | 15467.53 | 372.44  | 138.95 | -1.22  | .3312  | 41.335 | .0000  | .000  |
| 45.000                      | 464.73 | 464.72 | 6074.05 | 23.68  | .007 | 441.17 | 15486.54 | 512.71  | 139.05 | -1.22  | .3313  | 41.331 | .0000  | .000  |
| 60.000                      | 464.73 | 464.71 | 6074.03 | 30.12  | .009 | 441.43 | 15505.54 | 653.06  | 139.14 | -1.22  | .3313  | 41.326 | .0000  | .000  |
| 75.000                      | 464.72 | 464.69 | 6074.02 | 36.56  | .010 | 441.70 | 15524.55 | 793.52  | 139.23 | -1.22  | .3313  | 41.321 | .0000  | .000  |
| 90.000                      | 464.71 | 464.67 | 6074.00 | 42.98  | .012 | 441.96 | 15543.42 | 934.06  | 139.32 | -1.22  | .3313  | 41.316 | .0000  | .000  |
| 105.000                     | 464.70 | 464.65 | 6073.97 | 49.40  | .014 | 442.23 | 15562.30 | 1074.70 | 139.42 | -1.22  | .3314  | 41.311 | .0000  | .000  |
| 116.761                     | 464.69 | 464.62 | 6073.95 | 54.42  | .015 | 442.43 | 15577.07 | 1195.04 | 109.38 | -0.96  | .3314  | 41.305 | .0000  | .000  |
| 116.771                     | 464.69 | 464.60 | 6073.92 | 62.54  | .018 | 442.67 | 15594.48 | 1185.04 | .00    | -0.00  | .3314  | 41.306 | .0000  | .000  |
| 131.771                     | 464.67 | 464.60 | 6073.94 | 57.98  | .016 | 442.47 | 15638.25 | 1186.43 | .00    | -1.38  | .3313  | 41.306 | .0000  | .000  |
| 143.919                     | 464.66 | 464.58 | 6073.94 | 58.08  | .016 | 441.58 | 15517.21 | 1259.73 | 72.28  | -1.03  | .3313  | 41.299 | .0000  | .000  |
| 158.919                     | 464.64 | 464.55 | 6073.91 | 64.32  | .018 | 442.24 | 15575.62 | 1420.32 | 139.36 | -1.22  | .3314  | 41.293 | .0000  | .000  |
| 173.919                     | 464.62 | 464.52 | 6073.87 | 70.53  | .020 | 442.90 | 15633.74 | 1541.14 | 139.59 | -1.23  | .3314  | 41.287 | .0000  | .000  |
| 188.919                     | 464.60 | 464.48 | 6073.84 | 76.71  | .022 | 443.56 | 15691.56 | 1642.19 | 139.82 | -1.23  | .3315  | 41.281 | .0000  | .000  |
| 203.919                     | 464.58 | 464.43 | 6073.80 | 82.86  | .024 | 444.22 | 15749.10 | 1823.48 | 140.05 | -1.24  | .3315  | 41.275 | .0000  | .000  |
| 218.919                     | 464.56 | 464.39 | 6073.76 | 88.97  | .025 | 444.89 | 15806.33 | 1965.00 | 140.28 | -1.25  | .3316  | 41.269 | .0000  | .000  |
| 233.919                     | 464.54 | 464.34 | 6073.72 | 95.06  | .027 | 445.55 | 15863.28 | 2106.77 | 140.52 | -1.25  | .3317  | 41.263 | .0000  | .000  |
| 248.919                     | 464.51 | 464.29 | 6073.67 | 101.11 | .029 | 446.21 | 15919.93 | 2248.78 | 140.76 | -1.26  | .3317  | 41.256 | .0000  | .000  |
| 263.919                     | 464.48 | 464.23 | 6073.62 | 107.14 | .030 | 446.87 | 15976.28 | 2391.04 | 141.00 | -1.26  | .3318  | 41.250 | .0000  | .000  |
| 278.919                     | 464.45 | 464.17 | 6073.57 | 113.15 | .032 | 447.53 | 16032.34 | 2533.55 | 141.24 | -1.27  | .3319  | 41.243 | .0000  | .000  |
| 293.919                     | 464.42 | 464.11 | 6073.51 | 119.12 | .034 | 448.19 | 16088.81 | 2676.31 | 141.49 | -1.27  | .3320  | 41.237 | .0000  | .000  |
| 308.919                     | 464.38 | 464.04 | 6073.46 | 125.07 | .036 | 448.85 | 16143.58 | 2819.32 | 141.73 | -1.28  | .3321  | 41.230 | .0000  | .000  |
| 323.919                     | 464.35 | 463.98 | 6073.40 | 131.00 | .037 | 449.51 | 16198.76 | 2962.57 | 141.97 | -1.28  | .3321  | 41.223 | .0000  | .000  |
| 338.919                     | 464.31 | 463.90 | 6073.34 | 136.90 | .039 | 450.17 | 16253.64 | 3106.07 | 142.21 | -1.29  | .3322  | 41.216 | .0000  | .000  |
| 353.919                     | 464.27 | 463.83 | 6073.27 | 142.78 | .041 | 450.83 | 16308.23 | 3249.82 | 142.46 | -1.29  | .3323  | 41.209 | .0000  | .000  |
| 368.919                     | 464.23 | 463.75 | 6073.21 | 148.63 | .042 | 451.50 | 16362.53 | 3393.81 | 142.70 | -1.30  | .3324  | 41.202 | .0000  | .000  |
| 383.919                     | 464.19 | 463.67 | 6073.14 | 154.46 | .044 | 452.16 | 16416.53 | 3538.06 | 142.95 | -1.30  | .3325  | 41.195 | .0000  | .000  |
| 398.919                     | 464.14 | 463.59 | 6073.06 | 160.27 | .046 | 452.82 | 16470.24 | 3682.57 | 143.21 | -1.31  | .3326  | 41.188 | .0000  | .000  |
| 403.048                     | 464.13 | 463.56 | 6073.04 | 161.87 | .046 | 453.00 | 16484.97 | 3722.39 | 39.46  | -0.36  | .3326  | 41.180 | .0000  | .000  |
| 418.048                     | 464.10 | 463.48 | 6072.96 | 168.44 | .048 | 453.55 | 16425.76 | 3858.81 | 135.06 | -1.36  | .3329  | 41.164 | .0000  | .000  |
| 427.051                     | 464.09 | 463.47 | 6072.94 | 169.62 | .048 | 453.83 | 16381.95 | 3875.40 | 15.54  | -1.05  | .3329  | 41.174 | .0000  | .000  |
| 427.061                     | 464.08 | 463.43 | 6072.94 | 197.61 | .056 | .00    | 14067.75 | 3875.40 | .00    | -0.00  | .3328  | 41.029 | .0000  | .000  |
| 442.061                     | 464.02 | 463.23 | 6072.85 | 193.32 | .054 | -6.93  | 14612.37 | 3876.90 | .00    | -1.50  | .3319  | 41.194 | .0000  | .000  |
| 457.061                     | 463.94 | 463.19 | 6072.72 | 185.56 | .053 | 319.33 | 15183.80 | 3927.40 | 49.22  | -1.28  | .3311  | 41.164 | .0000  | .000  |
| 463.204                     | 463.90 | 463.15 | 6072.73 | 184.97 | .053 | 440.27 | 15425.56 | 3976.90 | 48.99  | -0.50  | .3308  | 41.122 | .0000  | .000  |
| 478.204                     | 463.84 | 463.05 | 6072.64 | 190.99 | .054 | 443.84 | 15467.91 | 4116.84 | 138.73 | -1.21  | .3309  | 41.101 | .0000  | .000  |
| 493.204                     | 463.78 | 462.94 | 6072.55 | 197.30 | .056 | 441.41 | 15510.05 | 4256.99 | 138.93 | -1.22  | .3309  | 41.091 | .0000  | .000  |
| 508.204                     | 463.73 | 462.83 | 6072.46 | 202.99 | .058 | 441.99 | 15551.98 | 4397.33 | 139.12 | -1.22  | .3309  | 41.081 | .0000  | .000  |
| 523.204                     | 463.67 | 462.72 | 6072.36 | 208.97 | .059 | 442.56 | 15593.69 | 4537.86 | 139.31 | -1.22  | .3310  | 41.071 | .0000  | .000  |
| 538.204                     | 463.60 | 462.60 | 6072.26 | 214.93 | .061 | 443.13 | 15635.19 | 4678.60 | 139.50 | -1.23  | .3310  | 41.060 | .0000  | .000  |
| 553.204                     | 463.54 | 462.48 | 6072.16 | 220.87 | .063 | 443.71 | 15676.48 | 4819.53 | 139.75 | -1.23  | .3310  | 41.050 | .0000  | .000  |
| 568.204                     | 463.47 | 462.36 | 6072.06 | 226.80 | .064 | 444.28 | 15717.56 | 4960.65 | 139.89 | -1.24  | .3311  | 41.040 | .0000  | .000  |
| 583.204                     | 463.41 | 462.23 | 6071.95 | 232.72 | .066 | 444.85 | 15758.42 | 5101.97 | 140.08 | -1.24  | .3311  | 41.029 | .0000  | .000  |
| 598.204                     | 463.34 | 462.10 | 6071.84 | 238.62 | .068 | 445.43 | 15799.08 | 5243.50 | 140.29 | -1.24  | .3312  | 41.019 | .0000  | .000  |
| 613.204                     | 463.26 | 461.97 | 6071.73 | 244.51 | .069 | 446.03 | 15839.52 | 5385.24 | 140.49 | -1.25  | .3312  | 41.008 | .0000  | .000  |

|          |        |        |         |        |      |        |          |          |        |       |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|----------|--------|-------|-------|--------|-------|------|
| 628.204  | 463.19 | 461.84 | 6071.62 | 250.39 | .071 | 446.57 | 15879.74 | 5527.19  | 140.70 | -1.25 | .3313 | 40.997 | .0000 | .000 |
| 443.204  | 463.12 | 461.70 | 6071.50 | 256.26 | .073 | 447.15 | 15919.76 | 5669.35  | 140.90 | -1.25 | .3313 | 40.986 | .0000 | .000 |
| 458.204  | 463.04 | 461.56 | 6071.38 | 262.11 | .074 | 447.72 | 15959.56 | 5811.71  | 141.11 | -1.26 | .3314 | 40.975 | .0000 | .000 |
| 473.204  | 462.96 | 461.41 | 6071.26 | 267.96 | .076 | 448.29 | 15999.15 | 5954.28  | 141.31 | -1.26 | .3314 | 40.964 | .0000 | .000 |
| 488.204  | 462.88 | 461.26 | 6071.14 | 273.79 | .078 | 448.87 | 16038.53 | 6097.06  | 141.52 | -1.26 | .3315 | 40.954 | .0000 | .000 |
| 503.204  | 462.80 | 461.11 | 6071.01 | 279.61 | .079 | 449.44 | 16077.73 | 6240.05  | 141.72 | -1.27 | .3315 | 40.943 | .0000 | .000 |
| 518.204  | 462.72 | 460.96 | 6070.88 | 285.43 | .081 | 450.01 | 16116.65 | 6383.25  | 141.92 | -1.27 | .3316 | 40.932 | .0000 | .000 |
| 533.204  | 462.64 | 460.81 | 6070.76 | 291.26 | .082 | 450.58 | 16155.32 | 6526.45  | 142.12 | -1.28 | .3316 | 40.920 | .0000 | .000 |
| 548.204  | 462.56 | 460.66 | 6070.64 | 297.09 | .083 | 451.15 | 16193.99 | 6669.65  | 142.32 | -1.28 | .3317 | 40.909 | .0000 | .000 |
| 563.204  | 462.48 | 460.51 | 6070.52 | 302.92 | .084 | 451.72 | 16232.66 | 6812.85  | 142.52 | -1.29 | .3317 | 40.898 | .0000 | .000 |
| 578.204  | 462.40 | 460.36 | 6070.40 | 308.75 | .085 | 452.29 | 16271.33 | 6956.05  | 142.72 | -1.30 | .3318 | 40.887 | .0000 | .000 |
| 593.204  | 462.32 | 460.21 | 6070.28 | 314.58 | .086 | 452.86 | 16310.00 | 7100.25  | 142.92 | -1.31 | .3319 | 40.876 | .0000 | .000 |
| 608.204  | 462.24 | 460.06 | 6070.16 | 320.41 | .087 | 453.43 | 16348.67 | 7244.45  | 143.12 | -1.32 | .3319 | 40.865 | .0000 | .000 |
| 623.204  | 462.16 | 459.91 | 6070.04 | 326.24 | .088 | 454.00 | 16387.34 | 7388.65  | 143.32 | -1.33 | .3319 | 40.854 | .0000 | .000 |
| 638.204  | 462.08 | 459.76 | 6069.92 | 332.07 | .089 | 454.57 | 16426.01 | 7532.85  | 143.52 | -1.34 | .3319 | 40.843 | .0000 | .000 |
| 653.204  | 462.00 | 459.61 | 6069.80 | 337.90 | .090 | 455.14 | 16464.68 | 7677.05  | 143.72 | -1.35 | .3319 | 40.832 | .0000 | .000 |
| 668.204  | 461.92 | 459.46 | 6069.68 | 343.73 | .091 | 455.71 | 16503.35 | 7821.25  | 143.92 | -1.36 | .3319 | 40.821 | .0000 | .000 |
| 683.204  | 461.84 | 459.31 | 6069.56 | 349.56 | .092 | 456.28 | 16542.02 | 7965.45  | 144.12 | -1.37 | .3319 | 40.810 | .0000 | .000 |
| 698.204  | 461.76 | 459.16 | 6069.44 | 355.39 | .093 | 456.85 | 16580.69 | 8109.65  | 144.32 | -1.38 | .3319 | 40.799 | .0000 | .000 |
| 713.204  | 461.68 | 459.01 | 6069.32 | 361.22 | .094 | 457.42 | 16619.36 | 8253.85  | 144.52 | -1.39 | .3319 | 40.788 | .0000 | .000 |
| 728.204  | 461.60 | 458.86 | 6069.20 | 367.05 | .095 | 457.99 | 16658.03 | 8398.05  | 144.72 | -1.40 | .3319 | 40.777 | .0000 | .000 |
| 743.204  | 461.52 | 458.71 | 6069.08 | 372.88 | .096 | 458.56 | 16696.70 | 8542.25  | 144.92 | -1.41 | .3319 | 40.766 | .0000 | .000 |
| 758.204  | 461.44 | 458.56 | 6068.96 | 378.71 | .097 | 459.13 | 16735.37 | 8686.45  | 145.12 | -1.42 | .3319 | 40.755 | .0000 | .000 |
| 773.204  | 461.36 | 458.41 | 6068.84 | 384.54 | .098 | 459.70 | 16774.04 | 8830.65  | 145.32 | -1.43 | .3319 | 40.744 | .0000 | .000 |
| 788.204  | 461.28 | 458.26 | 6068.72 | 390.37 | .099 | 460.27 | 16812.71 | 8974.85  | 145.52 | -1.44 | .3319 | 40.733 | .0000 | .000 |
| 803.204  | 461.20 | 458.11 | 6068.60 | 396.20 | .100 | 460.84 | 16851.38 | 9119.05  | 145.72 | -1.45 | .3319 | 40.722 | .0000 | .000 |
| 818.204  | 461.12 | 457.96 | 6068.48 | 402.03 | .101 | 461.41 | 16890.05 | 9263.25  | 145.92 | -1.46 | .3319 | 40.711 | .0000 | .000 |
| 833.204  | 461.04 | 457.81 | 6068.36 | 407.86 | .102 | 461.98 | 16928.72 | 9407.45  | 146.12 | -1.47 | .3319 | 40.700 | .0000 | .000 |
| 848.204  | 460.96 | 457.66 | 6068.24 | 413.69 | .103 | 462.55 | 16967.39 | 9551.65  | 146.32 | -1.48 | .3319 | 40.689 | .0000 | .000 |
| 863.204  | 460.88 | 457.51 | 6068.12 | 419.52 | .104 | 463.12 | 17006.06 | 9695.85  | 146.52 | -1.49 | .3319 | 40.678 | .0000 | .000 |
| 878.204  | 460.80 | 457.36 | 6068.00 | 425.35 | .105 | 463.69 | 17044.73 | 9840.05  | 146.72 | -1.50 | .3319 | 40.667 | .0000 | .000 |
| 893.204  | 460.72 | 457.21 | 6067.88 | 431.18 | .106 | 464.26 | 17083.40 | 9984.25  | 146.92 | -1.51 | .3319 | 40.656 | .0000 | .000 |
| 908.204  | 460.64 | 457.06 | 6067.76 | 437.01 | .107 | 464.83 | 17122.07 | 10128.45 | 147.12 | -1.52 | .3319 | 40.645 | .0000 | .000 |
| 923.204  | 460.56 | 456.91 | 6067.64 | 442.84 | .108 | 465.40 | 17160.74 | 10272.65 | 147.32 | -1.53 | .3319 | 40.634 | .0000 | .000 |
| 938.204  | 460.48 | 456.76 | 6067.52 | 448.67 | .109 | 465.97 | 17199.41 | 10416.85 | 147.52 | -1.54 | .3319 | 40.623 | .0000 | .000 |
| 953.204  | 460.40 | 456.61 | 6067.40 | 454.50 | .110 | 466.54 | 17238.08 | 10561.05 | 147.72 | -1.55 | .3319 | 40.612 | .0000 | .000 |
| 968.204  | 460.32 | 456.46 | 6067.28 | 460.33 | .111 | 467.11 | 17276.75 | 10705.25 | 147.92 | -1.56 | .3319 | 40.601 | .0000 | .000 |
| 983.204  | 460.24 | 456.31 | 6067.16 | 466.16 | .112 | 467.68 | 17315.42 | 10849.45 | 148.12 | -1.57 | .3319 | 40.590 | .0000 | .000 |
| 998.204  | 460.16 | 456.16 | 6067.04 | 471.99 | .113 | 468.25 | 17354.09 | 10993.65 | 148.32 | -1.58 | .3319 | 40.579 | .0000 | .000 |
| 1013.204 | 460.08 | 456.01 | 6066.92 | 477.82 | .114 | 468.82 | 17392.76 | 11137.85 | 148.52 | -1.59 | .3319 | 40.568 | .0000 | .000 |
| 1028.204 | 460.00 | 455.86 | 6066.80 | 483.65 | .115 | 469.39 | 17431.43 | 11282.05 | 148.72 | -1.60 | .3319 | 40.557 | .0000 | .000 |
| 1043.204 | 459.92 | 455.71 | 6066.68 | 489.48 | .116 | 469.96 | 17470.10 | 11426.25 | 148.92 | -1.61 | .3319 | 40.546 | .0000 | .000 |
| 1058.204 | 459.84 | 455.56 | 6066.56 | 495.31 | .117 | 470.53 | 17508.77 | 11570.45 | 149.12 | -1.62 | .3319 | 40.535 | .0000 | .000 |
| 1073.204 | 459.76 | 455.41 | 6066.44 | 501.14 | .118 | 471.10 | 17547.44 | 11714.65 | 149.32 | -1.63 | .3319 | 40.524 | .0000 | .000 |
| 1088.204 | 459.68 | 455.26 | 6066.32 | 506.97 | .119 | 471.67 | 17586.11 | 11858.85 | 149.52 | -1.64 | .3319 | 40.513 | .0000 | .000 |
| 1103.204 | 459.60 | 455.11 | 6066.20 | 512.80 | .120 | 472.24 | 17624.78 | 12003.05 | 149.72 | -1.65 | .3319 | 40.502 | .0000 | .000 |
| 1118.204 | 459.52 | 454.96 | 6066.08 | 518.63 | .121 | 472.81 | 17663.45 | 12147.25 | 149.92 | -1.66 | .3319 | 40.491 | .0000 | .000 |
| 1133.204 | 459.44 | 454.81 | 6065.96 | 524.46 | .122 | 473.38 | 17702.12 | 12291.45 | 150.12 | -1.67 | .3319 | 40.480 | .0000 | .000 |
| 1148.204 | 459.36 | 454.66 | 6065.84 | 530.29 | .123 | 473.95 | 17740.79 | 12435.65 | 150.32 | -1.68 | .3319 | 40.469 | .0000 | .000 |
| 1163.204 | 459.28 | 454.51 | 6065.72 | 536.12 | .124 | 474.52 | 17779.46 | 12579.85 | 150.52 | -1.69 | .3319 | 40.458 | .0000 | .000 |
| 1178.204 | 459.20 | 454.36 | 6065.60 | 541.95 | .125 | 475.09 | 17818.13 | 12724.05 | 150.72 | -1.70 | .3319 | 40.447 | .0000 | .000 |
| 1193.204 | 459.12 | 454.21 | 6065.48 | 547.78 | .126 | 475.66 | 17856.80 | 12868.25 | 150.92 | -1.71 | .3319 | 40.436 | .0000 | .000 |
| 1208.204 | 459.04 | 454.06 | 6065.36 | 553.61 | .127 | 476.23 | 17895.47 | 13012.45 | 151.12 | -1.72 | .3319 | 40.425 | .0000 | .000 |
| 1223.204 | 458.96 | 453.91 | 6065.24 | 559.44 | .128 | 476.80 | 17934.14 | 13156.65 | 151.32 | -1.73 | .3319 | 40.414 | .0000 | .000 |
| 1238.204 | 458.88 | 453.76 | 6065.12 | 565.27 | .129 | 477.37 | 17972.81 | 13300.85 | 151.52 | -1.74 | .3319 | 40.403 | .0000 | .000 |
| 1253.204 | 458.80 | 453.61 | 6065.00 | 571.10 | .130 | 477.94 | 18011.48 | 13445.05 | 151.72 | -1.75 | .3319 | 40.392 | .0000 | .000 |
| 1268.204 | 458.72 | 453.46 | 6064.88 | 576.93 | .131 | 478.51 | 18050.15 | 13589.25 | 151.92 | -1.76 | .3319 | 40.381 | .0000 | .000 |
| 1283.204 | 458.64 | 453.31 | 6064.76 | 582.76 | .132 | 479.08 | 18088.82 | 13733.45 | 152.12 | -1.77 | .3319 | 40.370 | .0000 | .000 |
| 1298.204 | 458.56 | 453.16 | 6064.64 | 588.59 | .133 | 479.65 | 18127.49 | 13877.65 | 152.32 | -1.78 | .3319 | 40.359 | .0000 | .000 |
| 1313.204 | 458.48 | 453.01 | 6064.52 | 594.42 | .134 | 480.22 | 18166.16 | 14021.85 | 152.52 | -1.79 | .3319 | 40.348 | .0000 | .000 |
| 1328.204 | 458.40 | 452.86 | 6064.40 | 600.25 | .135 | 480.79 | 18204.83 | 14166.05 | 152.72 | -1.80 | .3319 | 40.337 | .0000 | .000 |
| 1343.204 | 458.32 | 452.71 | 6064.28 | 606.08 | .136 | 481.36 | 18243.50 | 14310.25 | 152.92 | -1.81 | .3319 | 40.326 | .0000 | .000 |
| 1358.204 | 458.24 | 452.56 | 6064.16 | 611.91 | .137 | 481.93 | 18282.17 | 14454.45 | 153.12 | -1.82 | .3319 | 40.315 | .0000 | .000 |
| 1373.204 | 458.16 | 452.41 | 6064.04 | 617.74 | .138 | 482.50 | 18320.84 | 14598.65 | 153.32 | -1.83 | .3319 | 40.304 | .0000 | .000 |
| 1388.204 | 458.08 | 452.26 | 6063.92 | 623.57 | .139 | 483.07 | 18359.51 | 14742.85 | 153.52 | -1.84 | .3319 | 40.293 | .0000 | .000 |
| 1403.204 | 458.00 | 452.11 | 6063.80 | 629.40 | .140 | 483.64 | 18398.18 | 14887.05 | 153.72 | -1.85 | .3319 | 40.282 | .0000 | .000 |
| 1418.204 | 457.92 | 451.96 | 6063.68 | 635.23 | .141 | 484.21 | 18436.85 | 15031.25 | 153.92 | -1.86 | .3319 | 40.271 | .0000 | .000 |
| 1433.204 | 457.84 | 451.81 | 6063.56 | 641.06 | .142 | 484.78 | 18475.52 | 15175.45 | 154.12 | -1.87 | .3319 | 40.260 | .0000 | .000 |
| 1448.204 | 457.76 | 451.66 | 6063.44 | 646.89 | .143 | 485.35 | 18514.19 | 15319.65 | 154.32 | -1.88 | .3319 | 40.249 | .0000 | .000 |
| 1463.204 | 457.68 | 451.51 | 6063.32 | 652.72 | .144 | 485.92 | 18552.86 | 15463.85 | 154.52 | -1.89 | .3319 | 40.238 | .0000 | .000 |
| 1478.204 | 457.60 | 451.36 | 6063.20 | 658.55 | .145 | 486.49 | 18591.53 | 15608.05 | 154.72 | -1.90 | .3319 | 40.227 | .0000 | .000 |
| 1493.204 | 457.52 | 451.21 | 6063.08 | 664.38 | .146 | 487.06 | 18630.20 | 15752.25 | 154.92 | -1.91 | .3319 | 40.216 | .0000 | .000 |
| 1508.204 | 457.44 | 451.06 | 6062.96 | 670.21 | .147 | 487.63 | 18668.87 | 15896.45 | 155.12 | -1.92 | .3319 | 40.205 | .0000 | .000 |
| 1523.204 | 457.36 | 450.91 | 6062.84 | 676.04 | .148 | 488.20 | 18707.54 | 16040.65 | 155.32 | -1.93 | .3319 | 40.194 | .0000 | .000 |
| 1538.204 | 457.28 | 450.76 | 6062.72 | 681.87 | .149 | 488.77 | 18746.21 | 16184.85 | 155.52 | -1.94 | .3319 | 40.183 | .0000 | .000 |
| 1553.204 | 457.20 | 450.61 | 6062.60 | 687.70 | .150 | 489.34 | 18       |          |        |       |       |        |       |      |

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| SLUT<br>INTERFACE<br>LOCATION<br>IN.    | PD<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DNDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|-----------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FOREWARD                                | 1.1676*02  | 4.6469*02 | 4.6462*02   | 6.0740*03   | 5.1500*01     | 1.6460*04       | 0.0000        | 0.0000       | 0.0000              | 1.1850*03       |
| AFT                                     | 1.1677*02  | 4.6467*02 | 4.6460*02   | 6.0739*03   | 5.1502*01     | 1.6460*04       | 0.0000        | 0.0000       | 0.0000              | 1.1850*03       |
| GAS BUILDUP IN SLOT, DW/DT = -1.0460-03 |            |           |             |             |               |                 |               |              |                     |                 |
| FOREWARD                                | 4.2705*02  | 4.6409*02 | 4.6347*02   | 6.0729*03   | 1.6961*02     | 1.6383*04       | 0.0000        | 0.0000       | 0.0000              | 3.8754*03       |
| AFT                                     | 4.2706*02  | 4.6385*02 | 4.6323*02   | 6.0725*03   | 1.6968*02     | 1.6383*04       | 0.0000        | 0.0000       | 0.0000              | 3.8754*03       |
| GAS BUILDUP IN SLOT, DW/DT = -1.0390-03 |            |           |             |             |               |                 |               |              |                     |                 |
| FOREWARD                                | 7.4634*02  | 4.6252*02 | 4.6066*02   | 6.0707*03   | 2.9283*02     | 1.6383*04       | 0.0000        | 0.0000       | 0.0000              | 6.6529*03       |
| AFT                                     | 7.4635*02  | 4.6194*02 | 4.6008*02   | 6.0697*03   | 2.9315*02     | 1.6383*04       | 0.0000        | 0.0000       | 0.0000              | 6.6529*03       |
| GAS BUILDUP IN SLOT, DW/DT = -1.0426-03 |            |           |             |             |               |                 |               |              |                     |                 |

|                                       |                    |               |                |              |         |          |         |        |        |
|---------------------------------------|--------------------|---------------|----------------|--------------|---------|----------|---------|--------|--------|
| WEB BURNDOUT INCREMENT LOCATION =     | 418.0480           | SECTOR NO. =  | 5              | TAU =        | 41.1922 | TAUWDP = | 41.1922 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 418.0480           | SECTOR NO. =  | 6              | TAU =        | 41.1922 | TAUWDP = | 41.1922 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 418.0480           | SECTOR NO. =  | 7              | TAU =        | 41.1922 | TAUWDP = | 41.1922 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 418.0480           | SECTOR NO. =  | 8              | TAU =        | 41.1922 | TAUWDP = | 41.1922 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 741.1910           | SECTOR NO. =  | 2              | TAU =        | 41.1401 | TAUWDP = | 41.1401 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 741.1910           | SECTOR NO. =  | 3              | TAU =        | 41.1401 | TAUWDP = | 41.1401 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 761.3460           | SECTOR NO. =  | 1              | TAU =        | 41.1036 | TAUWDP = | 41.1036 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 761.3460           | SECTOR NO. =  | 2              | TAU =        | 41.1036 | TAUWDP = | 41.1036 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 761.3460           | SECTOR NO. =  | 3              | TAU =        | 41.1036 | TAUWDP = | 41.1036 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 761.3460           | SECTOR NO. =  | 4              | TAU =        | 41.1036 | TAUWDP = | 41.1036 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 809.8310           | SECTOR NO. =  | 2              | TAU =        | 41.0931 | TAUWDP = | 41.0931 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 1              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 3              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 4              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 5              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 6              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 7              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| WEB BURNDOUT INCREMENT LOCATION =     | 824.8310           | SECTOR NO. =  | 8              | TAU =        | 40.9162 | TAUWDP = | 40.9162 | TIME = | 110.00 |
| *PARTON* TIME=110.50 IS=1 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 407.98 AINCHI= | 403.05 DELZ= | 4.937   | ALP=     | 453.67  | ALPHI= | 453.46 |
| *PARTON* TIME=110.50 IS=2 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 406.62 AINCHI= | 403.05 DELZ= | 2.570   | ALP=     | 453.67  | ALPHI= | 453.56 |
| *PARTON* TIME=110.50 IS=3 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 406.66 AINCHI= | 403.05 DELZ= | 3.015   | ALP=     | 453.67  | ALPHI= | 453.54 |
| *PARTON* TIME=110.50 IS=4 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 408.63 AINCHI= | 403.05 DELZ= | 5.587   | ALP=     | 453.67  | ALPHI= | 453.43 |
| *PARTON* TIME=110.50 IS=5 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 411.69 AINCHI= | 403.05 DELZ= | 6.642   | ALP=     | 453.67  | ALPHI= | 453.30 |
| *PARTON* TIME=110.50 IS=6 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 412.59 AINCHI= | 403.05 DELZ= | 9.538   | ALP=     | 453.67  | ALPHI= | 453.26 |
| *PARTON* TIME=110.50 IS=7 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 412.41 AINCHI= | 403.05 DELZ= | 9.362   | ALP=     | 453.67  | ALPHI= | 453.27 |
| *PARTON* TIME=110.50 IS=8 ZCALC( 31)= | 418.05 ZCALC( 30)= | 403.05 AINCW= | 411.37 AINCHI= | 403.05 DELZ= | 8.321   | ALP=     | 453.67  | ALPHI= | 453.32 |
| *PARTON* TIME=110.50 IS=1 ZCALC( 34)= | 442.06 ZCALC( 33)= | 427.06 AINCW= | 442.06 AINCHI= | 432.66 DELZ= | 9.398   | ALP=     | -11.69  | ALPHI= | *****  |
| *PARTON* TIME=110.50 IS=2 ZCALC( 34)= | 442.06 ZCALC( 33)= | 427.06 AINCW= | 442.06 AINCHI= | 433.32 DELZ= | 8.741   | ALP=     | -12.70  | ALPHI= | *****  |
| *PARTON* TIME=110.50 IS=3 ZCALC( 34)= | 442.06 ZCALC( 33)= | 427.06 AINCW= | 442.06 AINCHI= | 433.20 DELZ= | 5.866   | ALP=     | -12.61  | ALPHI= | *****  |
| *PARTON* TIME=110.50 IS=4 ZCALC( 34)= | 442.06 ZCALC( 33)= | 427.06 AINCW= | 442.06 AINCHI= | 432.48 DELZ= | 9.576   | ALP=     | -11.42  | ALPHI= | *****  |
| *PARTON* TIME=110.50 IS=5 ZCALC( 34)= | 442.06 ZCALC( 33)= | 427.06 AINCW= | 442.06 AINCHI= | 431.64 DELZ= | 10.421  | ALP=     | -10.12  | ALPHI= | *****  |

•PARTBN• TIME=110.50 15=5 ZCALCI 34)= 442.06 ZCALCI 33)= 427.06 AINCW= 442.06 AINCW= 431.44 DELZ=10.671 ALP= -9.71 ALPHI=•••••  
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•PARTBN• TIME=110.50 15=6 ZCALCI 58)= 761.35 ZCALCI 57)= 746.35 AINCW= 761.35 AINCW= 754.74 DELZ= 6.609 ALP=••••• ALPHI=•••••  
•PARTBN• TIME=110.50 15=7 ZCALCI 58)= 761.35 ZCALCI 57)= 746.35 AINCW= 751.35 AINCW= 755.37 DELZ= 5.972 ALP=••••• ALPHI=•••••  
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•PARTBN• TIME=110.50 15=1 ZCALCI 59)= 776.35 ZCALCI 58)= 761.35 AINCW= 776.35 AINCW= 768.86 DELZ= 7.489 ALP=109.28 ALPHI=-32.35  
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•PARTBN• TIME=110.50 15=2 ZCALCI 60)= 791.35 ZCALCI 59)= 776.35 AINCW= 791.35 AINCW= 775.29 DELZ=16.059 ALP=388.54 ALPHI= 87.90  
•PARTBN• TIME=110.50 15=2 ZCALCI 62)= 809.83 ZCALCI 61)= 794.83 AINCW= 809.83 AINCW= 794.83 DELZ=14.528 ALP=453.41 ALPHI=452.50  
•PARTBN• TIME=110.50 15=3 ZCALCI 62)= 809.83 AINCW= 810.06 AINCW= 810.06 AINCW= 794.83 DELZ=15.229 ALP=453.41 ALPHI=452.45  
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•PARTBN• TIME=110.50 15=4 ZCALCI 63)= 824.83 ZCALCI 62)= 809.83 AINCW= 814.20 AINCW= 809.83 DELZ= 4.365 ALP=453.38 ALPHI=453.16  
•PARTBN• TIME=110.50 15=5 ZCALCI 63)= 824.83 ZCALCI 62)= 809.83 AINCW= 819.14 AINCW= 809.83 DELZ= 9.307 ALP=453.35 ALPHI=452.82  
•PARTBN• TIME=110.50 15=6 ZCALCI 63)= 824.83 ZCALCI 62)= 809.83 AINCW= 820.58 AINCW= 809.83 DELZ=10.746 ALP=453.35 ALPHI=452.72  
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•PARTBN• TIME=110.50 15=3 ZCALCI 31)= 418.05 ZCALCI 30)= 403.05 AINCW= 405.06 AINCW= 403.05 DELZ= 3.015 ALP=453.67 ALPHI=453.54  
•PARTBN• TIME=110.50 15=4 ZCALCI 31)= 418.05 ZCALCI 30)= 403.05 AINCW= 408.63 AINCW= 403.05 DELZ= 5.587 ALP=453.67 ALPHI=453.43  
•PARTBN• TIME=110.50 15=5 ZCALCI 31)= 418.05 ZCALCI 30)= 403.05 AINCW= 411.69 AINCW= 403.05 DELZ= 8.642 ALP=453.67 ALPHI=453.30  
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•PARTBN• TIME=110.50 15=4 ZCALCI 34)= 442.06 ZCALCI 33)= 427.06 AINCW= 442.06 AINCW= 432.48 DELZ= 9.578 ALP=••••• ALPHI=•••••  
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•PARTBN• TIME=110.50 15=7 ZCALCI 34)= 442.06 ZCALCI 33)= 427.06 AINCW= 442.06 AINCW= 431.44 DELZ=10.622 ALP= -9.79 ALPHI=•••••  
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•PARTBN• TIME=110.50 15=4 ZCALCI 56)= 746.34 ZCALCI 55)= 741.19 AINCW= 743.25 AINCW= 741.19 DELZ= 2.056 ALP=453.67 ALPHI=453.47  
•PARTBN• TIME=110.50 15=5 ZCALCI 56)= 746.34 ZCALCI 55)= 741.19 AINCW= 745.94 AINCW= 741.19 DELZ= 4.751 ALP=453.67 ALPHI=453.12  
•PARTBN• TIME=110.50 15=6 ZCALCI 56)= 746.34 ZCALCI 55)= 741.19 AINCW= 746.73 AINCW= 741.19 DELZ= 5.537 ALP=453.67 ALPHI=452.99  
•PARTBN• TIME=110.50 15=7 ZCALCI 56)= 746.34 ZCALCI 55)= 741.19 AINCW= 746.57 AINCW= 741.19 DELZ= 5.382 ALP=453.67 ALPHI=453.00  
•PARTBN• TIME=110.50 15=8 ZCALCI 56)= 746.34 ZCALCI 55)= 741.19 AINCW= 746.66 AINCW= 741.19 DELZ= 4.460 ALP=453.67 ALPHI=453.16  
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|                        |                     |                         |                    |                  |                |             |            |              |
|------------------------|---------------------|-------------------------|--------------------|------------------|----------------|-------------|------------|--------------|
| •PARTBN•               | TIME=110.50         | IS=3 ZCALC( 59)= 776.35 | ZCALC( 58)= 761.35 | AINCW= 776.35    | AINCHI= 774.05 | DELZ= 2.300 | ALP=107.92 | ALPHI= 64.69 |
| •PARTBN•               | TIME=110.50         | IS=4 ZCALC( 59)= 776.35 | ZCALC( 58)= 761.35 | AINCW= 776.35    | AINCHI= 767.11 | DELZ= 9.240 | ALP=107.73 | ALPHI= 65.15 |
| •PARTBN•               | TIME=110.50         | IS=2 ZCALC( 60)= 791.35 | ZCALC( 59)= 776.35 | AINCW= 791.35    | AINCHI= 775.29 | DELZ=16.059 | ALP=388.54 | ALPHI= 87.90 |
| •PARTBN•               | TIME=110.50         | IS=2 ZCALC( 62)= 809.83 | ZCALC( 61)= 794.83 | AINCW= 809.36    | AINCHI= 794.83 | DELZ=14.528 | ALP=453.41 | ALPHI=452.50 |
| •PARTBN•               | TIME=110.50         | IS=3 ZCALC( 62)= 809.83 | ZCALC( 61)= 794.83 | AINCW= 810.06    | AINCHI= 794.83 | DELZ=15.229 | ALP=453.41 | ALPHI=452.45 |
| •PARTBN•               | TIME=110.50         | IS=1 ZCALC( 63)= 824.83 | ZCALC( 62)= 809.83 | AINCW= 813.15    | AINCHI= 809.83 | DELZ= 3.319 | ALP=453.39 | ALPHI=453.29 |
| •PARTBN•               | TIME=110.50         | IS=4 ZCALC( 63)= 824.83 | ZCALC( 62)= 809.83 | AINCW= 814.20    | AINCHI= 809.83 | DELZ= 4.365 | ALP=453.38 | ALPHI=453.16 |
| •PARTBN•               | TIME=110.50         | IS=5 ZCALC( 63)= 824.83 | ZCALC( 62)= 809.83 | AINCW= 819.14    | AINCHI= 809.83 | DELZ= 9.307 | ALP=453.35 | ALPHI=452.82 |
| •PARTBN•               | TIME=110.50         | IS=6 ZCALC( 63)= 824.83 | ZCALC( 62)= 809.83 | AINCW= 820.58    | AINCHI= 809.83 | DELZ=10.746 | ALP=453.35 | ALPHI=452.72 |
| •PARTBN•               | TIME=110.50         | IS=7 ZCALC( 63)= 824.83 | ZCALC( 62)= 809.83 | AINCW= 820.30    | AINCHI= 809.83 | DELZ=10.464 | ALP=453.35 | ALPHI=452.74 |
| •PARTBN•               | TIME=110.50         | IS=6 ZCALC( 63)= 824.83 | ZCALC( 62)= 809.83 | AINCW= 818.62    | AINCHI= 809.83 | DELZ= 8.788 | ALP=453.36 | ALPHI=452.85 |
| •REB BURNOUT INCREMENT | LOCATION = 398.9190 | SECTOR NO. 1            | TAU = 41.4938      | TAUWDP = 41.4938 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 398.9190 | SECTOR NO. 2            | TAU = 41.4938      | TAUWDP = 41.4938 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 398.9190 | SECTOR NO. 3            | TAU = 41.4938      | TAUWDP = 41.4938 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 398.9190 | SECTOR NO. 4            | TAU = 41.4938      | TAUWDP = 41.4938 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 403.0480 | SECTOR NO. 1            | TAU = 41.4640      | TAUWDP = 41.4640 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 403.0480 | SECTOR NO. 2            | TAU = 41.4640      | TAUWDP = 41.4640 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 403.0480 | SECTOR NO. 3            | TAU = 41.4640      | TAUWDP = 41.4640 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 403.0480 | SECTOR NO. 4            | TAU = 41.4640      | TAUWDP = 41.4640 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 403.0480 | SECTOR NO. 5            | TAU = 41.4640      | TAUWDP = 41.4640 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 403.0480 | SECTOR NO. 8            | TAU = 41.4640      | TAUWDP = 41.4640 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 741.1910 | SECTOR NO. 1            | TAU = 41.1401      | TAUWDP = 41.1401 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 741.1910 | SECTOR NO. 4            | TAU = 41.1401      | TAUWDP = 41.1401 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 741.1910 | SECTOR NO. 5            | TAU = 41.1401      | TAUWDP = 41.1401 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 741.1910 | SECTOR NO. 6            | TAU = 41.1401      | TAUWDP = 41.1401 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 741.1910 | SECTOR NO. 7            | TAU = 41.1401      | TAUWDP = 41.1401 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 741.1910 | SECTOR NO. 8            | TAU = 41.1401      | TAUWDP = 41.1401 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 761.3460 | SECTOR NO. 5            | TAU = 41.1036      | TAUWDP = 41.1036 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 761.3460 | SECTOR NO. 6            | TAU = 41.1036      | TAUWDP = 41.1036 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 761.3460 | SECTOR NO. 7            | TAU = 41.1036      | TAUWDP = 41.1036 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 761.3460 | SECTOR NO. 8            | TAU = 41.1036      | TAUWDP = 41.1036 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 776.3460 | SECTOR NO. 1            | TAU = 41.1781      | TAUWDP = 41.1781 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 776.3460 | SECTOR NO. 2            | TAU = 41.1781      | TAUWDP = 41.1781 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 776.3460 | SECTOR NO. 3            | TAU = 41.1781      | TAUWDP = 41.1781 | TIME = 110.50  |             |            |              |
| •REB BURNOUT INCREMENT | LOCATION = 776.3460 | SECTOR NO. 4            | TAU = 41.1781      | TAUWDP = 41.1781 |                |             |            |              |



|          |             |      |            |        |            |        |        |        |         |        |       |        |            |              |
|----------|-------------|------|------------|--------|------------|--------|--------|--------|---------|--------|-------|--------|------------|--------------|
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(30)= | 403.05 | ZCALC(29)= | 398.92 | AINCW= | 404.07 | AINCHI= | 398.92 | DELZ= | 5.155  | ALP=453.67 | ALPHI=453.51 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.19 | DELZ= | 6.872  | ALP=-15.74 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.85 | DELZ= | 6.213  | ALP=-16.77 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.72 | DELZ= | 6.338  | ALP=-16.58 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.01 | DELZ= | 7.053  | ALP=-15.46 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 434.16 | DELZ= | 7.900  | ALP=-14.14 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 433.91 | DELZ= | 8.151  | ALP=-13.74 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 433.96 | DELZ= | 8.102  | ALP=-13.82 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 434.25 | DELZ= | 7.811  | ALP=-14.28 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 734.93 | AINCHI= | 726.19 | DELZ= | 8.742  | ALP=453.67 | ALPHI=452.56 |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 732.93 | AINCHI= | 726.19 | DELZ= | 6.741  | ALP=453.67 | ALPHI=452.83 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 733.31 | AINCHI= | 726.19 | DELZ= | 7.121  | ALP=453.67 | ALPHI=452.79 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 735.48 | AINCHI= | 726.19 | DELZ= | 9.292  | ALP=453.67 | ALPHI=452.49 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 738.08 | AINCHI= | 726.19 | DELZ= | 11.886 | ALP=453.67 | ALPHI=452.15 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 738.84 | AINCHI= | 726.19 | DELZ= | 12.645 | ALP=453.67 | ALPHI=452.05 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 738.69 | AINCHI= | 726.19 | DELZ= | 12.496 | ALP=453.67 | ALPHI=452.07 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 737.80 | AINCHI= | 726.19 | DELZ= | 11.614 | ALP=453.67 | ALPHI=452.18 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(60)= | 791.35 | ZCALC(59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 783.02 | DELZ= | 8.331  | ALP=388.41 | ALPHI=232.46 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(60)= | 791.35 | ZCALC(59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 780.71 | DELZ= | 10.640 | ALP=388.45 | ALPHI=189.27 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(60)= | 791.35 | ZCALC(59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 781.16 | DELZ= | 10.187 | ALP=388.44 | ALPHI=197.75 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC(60)= | 791.35 | ZCALC(59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 783.84 | DELZ= | 7.504  | ALP=388.40 | ALPHI=247.94 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(61)= | 794.83 | ZCALC(60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 791.90 | DELZ= | 2.934  | ALP=453.27 | ALPHI=398.61 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(61)= | 794.83 | ZCALC(60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 794.12 | DELZ= | 7.710  | ALP=453.49 | ALPHI=440.22 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(61)= | 794.83 | ZCALC(60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 791.15 | DELZ= | 3.686  | ALP=453.20 | ALPHI=384.55 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 798.81 | AINCHI= | 794.83 | DELZ= | 3.980  | ALP=453.48 | ALPHI=453.27 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 795.80 | AINCHI= | 794.83 | DELZ= | 9.964  | ALP=453.49 | ALPHI=453.49 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 799.83 | AINCHI= | 794.83 | DELZ= | 4.998  | ALP=453.47 | ALPHI=453.20 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 804.63 | AINCHI= | 794.83 | DELZ= | 9.804  | ALP=453.44 | ALPHI=452.85 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 806.04 | AINCHI= | 794.83 | DELZ= | 11.238 | ALP=453.43 | ALPHI=452.75 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 805.76 | AINCHI= | 794.83 | DELZ= | 10.933 | ALP=453.43 | ALPHI=452.77 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC(62)= | 809.83 | ZCALC(61)= | 794.83 | AINCW= | 804.13 | AINCHI= | 794.83 | DELZ= | 9.300  | ALP=453.44 | ALPHI=452.89 |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC(28)= | 383.92 | ZCALC(27)= | 368.92 | AINCW= | 384.73 | AINCHI= | 368.92 | DELZ= | 15.807 | ALP=453.69 | ALPHI=453.42 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(29)= | 398.92 | ZCALC(28)= | 383.92 | AINCW= | 391.08 | AINCHI= | 383.92 | DELZ= | 7.163  | ALP=453.69 | ALPHI=453.57 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(29)= | 398.92 | ZCALC(28)= | 383.92 | AINCW= | 385.91 | AINCHI= | 383.92 | DELZ= | 1.990  | ALP=453.69 | ALPHI=453.67 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(29)= | 398.92 | ZCALC(28)= | 383.92 | AINCW= | 392.83 | AINCHI= | 383.92 | DELZ= | 8.912  | ALP=453.68 | ALPHI=453.54 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(29)= | 398.92 | ZCALC(28)= | 383.92 | AINCW= | 400.21 | AINCHI= | 383.92 | DELZ= | 16.289 | ALP=453.67 | ALPHI=453.41 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(30)= | 403.05 | ZCALC(29)= | 398.92 | AINCW= | 401.62 | AINCHI= | 398.92 | DELZ= | 2.706  | ALP=453.67 | ALPHI=453.64 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(30)= | 403.05 | ZCALC(29)= | 398.92 | AINCW= | 404.67 | AINCHI= | 398.92 | DELZ= | 5.753  | ALP=453.67 | ALPHI=453.51 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.19 | DELZ= | 6.872  | ALP=-15.74 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.85 | DELZ= | 6.213  | ALP=-16.77 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.72 | DELZ= | 6.338  | ALP=-16.58 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.01 | DELZ= | 7.053  | ALP=-15.46 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 434.16 | DELZ= | 7.900  | ALP=-14.14 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 433.91 | DELZ= | 8.151  | ALP=-13.74 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 433.96 | DELZ= | 8.102  | ALP=-13.82 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC(34)= | 442.06 | ZCALC(33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 434.25 | DELZ= | 7.811  | ALP=-14.28 | ALPHI=*****  |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 734.93 | AINCHI= | 726.19 | DELZ= | 8.742  | ALP=453.67 | ALPHI=452.56 |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 732.93 | AINCHI= | 726.19 | DELZ= | 6.741  | ALP=453.67 | ALPHI=452.83 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 733.31 | AINCHI= | 726.19 | DELZ= | 7.121  | ALP=453.67 | ALPHI=452.79 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 735.48 | AINCHI= | 726.19 | DELZ= | 9.292  | ALP=453.67 | ALPHI=452.49 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 738.08 | AINCHI= | 726.19 | DELZ= | 11.886 | ALP=453.67 | ALPHI=452.15 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 738.84 | AINCHI= | 726.19 | DELZ= | 12.645 | ALP=453.67 | ALPHI=452.05 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 738.69 | AINCHI= | 726.19 | DELZ= | 12.496 | ALP=453.67 | ALPHI=452.07 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC(55)= | 741.19 | ZCALC(54)= | 726.19 | AINCW= | 737.80 | AINCHI= | 726.19 | DELZ= | 11.614 | ALP=453.67 | ALPHI=452.18 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC(60)= | 791.35 | ZCALC(59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 783.02 | DELZ= | 8.331  | ALP=388.41 | ALPHI=232.46 |

|          |             |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|----------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 60)= | 791.35 | ZCALC( 59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 780.71 | DELZ= | 10.640 | ALP= | 388.45 | ALPHI= | 189.27 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 60)= | 791.35 | ZCALC( 59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 781.16 | DELZ= | 10.187 | ALP= | 388.44 | ALPHI= | 197.75 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC( 60)= | 791.35 | ZCALC( 59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 783.84 | DELZ= | 7.504  | ALP= | 388.40 | ALPHI= | 247.94 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 791.90 | DELZ= | 2.934  | ALP= | 453.27 | ALPHI= | 398.61 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 794.12 | DELZ= | .710   | ALP= | 453.49 | ALPHI= | 440.22 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 791.15 | DELZ= | 3.686  | ALP= | 453.20 | ALPHI= | 384.55 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 798.81 | AINCHI= | 794.83 | DELZ= | 3.980  | ALP= | 453.48 | ALPHI= | 453.27 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 795.80 | AINCHI= | 794.83 | DELZ= | .964   | ALP= | 453.49 | ALPHI= | 453.49 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 799.83 | AINCHI= | 794.83 | DELZ= | 4.998  | ALP= | 453.47 | ALPHI= | 453.20 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 804.63 | AINCHI= | 794.83 | DELZ= | 9.804  | ALP= | 453.44 | ALPHI= | 452.85 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 806.04 | AINCHI= | 794.83 | DELZ= | 11.208 | ALP= | 453.43 | ALPHI= | 452.75 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 805.76 | AINCHI= | 794.83 | DELZ= | 10.933 | ALP= | 453.43 | ALPHI= | 452.77 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 804.13 | AINCHI= | 794.83 | DELZ= | 9.300  | ALP= | 453.44 | ALPHI= | 452.89 |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC( 28)= | 383.92 | ZCALC( 27)= | 368.92 | AINCW= | 384.73 | AINCHI= | 368.92 | DELZ= | 15.897 | ALP= | 453.69 | ALPHI= | 453.42 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 29)= | 398.92 | ZCALC( 28)= | 383.92 | AINCW= | 391.08 | AINCHI= | 383.92 | DELZ= | 7.163  | ALP= | 453.69 | ALPHI= | 453.57 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 29)= | 398.92 | ZCALC( 28)= | 383.92 | AINCW= | 385.91 | AINCHI= | 383.92 | DELZ= | 1.990  | ALP= | 453.67 | ALPHI= | 453.67 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 29)= | 398.92 | ZCALC( 28)= | 383.92 | AINCW= | 392.83 | AINCHI= | 383.92 | DELZ= | 8.912  | ALP= | 453.68 | ALPHI= | 453.54 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC( 29)= | 398.92 | ZCALC( 28)= | 383.92 | AINCW= | 400.21 | AINCHI= | 383.92 | DELZ= | 16.289 | ALP= | 453.67 | ALPHI= | 453.41 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 30)= | 403.05 | ZCALC( 29)= | 398.92 | AINCW= | 401.62 | AINCHI= | 398.92 | DELZ= | 2.706  | ALP= | 453.67 | ALPHI= | 453.64 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 30)= | 403.05 | ZCALC( 29)= | 398.92 | AINCW= | 404.67 | AINCHI= | 398.92 | DELZ= | 5.753  | ALP= | 453.67 | ALPHI= | 453.51 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 30)= | 403.05 | ZCALC( 29)= | 398.92 | AINCW= | 404.07 | AINCHI= | 398.92 | DELZ= | 5.155  | ALP= | 453.67 | ALPHI= | 453.51 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.19 | DELZ= | 6.072  | ALP= | -15.74 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.85 | DELZ= | 6.213  | ALP= | -16.77 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.72 | DELZ= | 6.338  | ALP= | -16.58 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 435.01 | DELZ= | 7.053  | ALP= | -15.46 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 434.16 | DELZ= | 7.900  | ALP= | -14.14 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 433.91 | DELZ= | 8.151  | ALP= | -13.74 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 433.96 | DELZ= | 8.102  | ALP= | -13.82 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06 | AINCHI= | 434.25 | DELZ= | 7.811  | ALP= | -14.28 | ALPHI= | *****  |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 734.93 | AINCHI= | 726.19 | DELZ= | 8.742  | ALP= | 453.67 | ALPHI= | 452.56 |
| *PARTBN* | TIME=111.00 | IS=2 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 732.93 | AINCHI= | 726.19 | DELZ= | 6.741  | ALP= | 453.67 | ALPHI= | 452.83 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 733.31 | AINCHI= | 726.19 | DELZ= | 7.121  | ALP= | 453.67 | ALPHI= | 452.78 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 735.48 | AINCHI= | 726.19 | DELZ= | 9.292  | ALP= | 453.67 | ALPHI= | 452.49 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 738.08 | AINCHI= | 726.19 | DELZ= | 11.886 | ALP= | 453.67 | ALPHI= | 452.15 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 738.84 | AINCHI= | 726.19 | DELZ= | 12.645 | ALP= | 453.67 | ALPHI= | 452.05 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 738.69 | AINCHI= | 726.19 | DELZ= | 12.496 | ALP= | 453.67 | ALPHI= | 452.07 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC( 55)= | 741.19 | ZCALC( 54)= | 726.19 | AINCW= | 737.80 | AINCHI= | 726.19 | DELZ= | 11.614 | ALP= | 453.67 | ALPHI= | 452.18 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 60)= | 791.35 | ZCALC( 59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 783.02 | DELZ= | 8.331  | ALP= | 388.41 | ALPHI= | 232.46 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 791.35 | AINCHI= | 780.71 | DELZ= | 10.640 | ALP= | 388.45 | ALPHI= | 189.27 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 60)= | 791.35 | ZCALC( 59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 781.16 | DELZ= | 10.187 | ALP= | 388.44 | ALPHI= | 197.75 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC( 60)= | 791.35 | ZCALC( 59)= | 776.35 | AINCW= | 791.35 | AINCHI= | 783.84 | DELZ= | 7.504  | ALP= | 388.40 | ALPHI= | 247.94 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 791.90 | DELZ= | 2.934  | ALP= | 453.27 | ALPHI= | 398.61 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 794.12 | DELZ= | .710   | ALP= | 453.49 | ALPHI= | 440.22 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 61)= | 794.83 | ZCALC( 60)= | 791.35 | AINCW= | 794.83 | AINCHI= | 791.15 | DELZ= | 3.686  | ALP= | 453.20 | ALPHI= | 384.55 |
| *PARTBN* | TIME=111.00 | IS=1 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 798.81 | AINCHI= | 794.83 | DELZ= | 3.980  | ALP= | 453.48 | ALPHI= | 453.27 |
| *PARTBN* | TIME=111.00 | IS=3 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 795.80 | AINCHI= | 794.83 | DELZ= | .964   | ALP= | 453.49 | ALPHI= | 453.49 |
| *PARTBN* | TIME=111.00 | IS=4 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 799.83 | AINCHI= | 794.83 | DELZ= | 4.998  | ALP= | 453.47 | ALPHI= | 453.20 |
| *PARTBN* | TIME=111.00 | IS=5 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 804.63 | AINCHI= | 794.83 | DELZ= | 9.804  | ALP= | 453.44 | ALPHI= | 452.85 |
| *PARTBN* | TIME=111.00 | IS=6 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 806.04 | AINCHI= | 794.83 | DELZ= | 11.208 | ALP= | 453.43 | ALPHI= | 452.75 |
| *PARTBN* | TIME=111.00 | IS=7 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 805.76 | AINCHI= | 794.83 | DELZ= | 10.933 | ALP= | 453.43 | ALPHI= | 452.77 |
| *PARTBN* | TIME=111.00 | IS=8 | ZCALC( 62)= | 809.83 | ZCALC( 61)= | 794.83 | AINCW= | 804.13 | AINCHI= | 794.83 | DELZ= | 9.300  | ALP= | 453.44 | ALPHI= | 452.89 |



IGNITION TIME, TIME (S)

111.00000

DATE 071076

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| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 7399763.9     | 1663533.1    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 7426249.2     | 1665440.7    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 60175.034     | 13527.879    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRNDTI               | .12670694*10  | .27136000*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 255.61515     | 255.61515    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .12570456*10  | .28259509*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6286766     | 1.6286766    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 2923.0503     | 6444.2229    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 494945.86     | 1091168.8    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 32.295488     | 71.199364    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 123.26193     | 271.74604    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 194.28004     | 301134.66    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 7.4817188     | 456562.49    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 10791.620     | 23798.365    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 1007.9209     | 2222.0852    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1595481     | 1.1595481    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.803557     | 28.227011    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1556.1370     | 5105.4363    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .99074653-01  | .99074653-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .28893791+09  | 419.06901    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .52243237+11  | 75772.410    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 2.0157896     | 3124.4802    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .81301345-02  | .32008404    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.0595502     | 41.714573    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .28166754     | 17188.408    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.822164     | 3345453.7    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3366.6158     | 6059.9102    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| AXIAL BURN AREA (M**2,IN**2)               | ABCYL                | 192.26425     | 298010.18    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 7.1908850     | 439254.10    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 276.56210     | 16876854.    |
| <b>NOZ END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .28432304+09  | 412.37571    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .49845071+11  | 72294.164    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .81077371-02  | .31920225    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .81005810-02  | .31892052    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74628400     | 29.463000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.347463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3365.4643     | 6057.8358    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.5998109     | 2479.7119    |
| EXPANSION RATIO                            | EPR                  | 6.7186157     | 6.7186157    |
| PRESSURE RATIO                             | PEPU                 | .23509126-01  | .23509126-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 3.9000000     | 3.0000000    |

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OF POOR QUALITY

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | INCHES   | SQ. IN. | WDOT   | DWDOT  | LB/SEC | OW/DT  | RD     | TAU  | RBDT   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      |        |          |         | LB/SEC | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.  | IN/SEC | IN.   |
| FONE                        | 419.07 | 419.07 | 6059.91 | 5.57   | .002 | 442.44 | 15574.50 | 109.43  | 63.36  | -46.07 | .3196  | 41.715 | .0000  | .000 | .0000  | .000  |
| 15.000                      | 419.07 | 419.07 | 6059.91 | 12.55  | .004 | 442.71 | 15593.72 | 247.06  | 134.63 | -3.00  | .3196  | 41.669 | .0000  | .000 | .0000  | .000  |
| 30.000                      | 419.07 | 419.06 | 6059.90 | 19.52  | .006 | 442.97 | 15612.90 | 344.78  | 134.72 | -3.00  | .3196  | 41.664 | .0000  | .000 | .0000  | .000  |
| 45.000                      | 419.06 | 419.03 | 6059.88 | 26.48  | .008 | 443.24 | 15632.04 | 522.59  | 134.81 | -3.01  | .3197  | 41.660 | .0000  | .000 | .0000  | .000  |
| 60.000                      | 419.06 | 419.03 | 6059.87 | 33.42  | .009 | 443.50 | 15651.13 | 680.50  | 134.90 | -3.01  | .3197  | 41.655 | .0000  | .000 | .0000  | .000  |
| 75.000                      | 419.05 | 419.02 | 6059.85 | 40.38  | .011 | 443.77 | 15670.19 | 778.50  | 134.99 | -3.01  | .3197  | 41.650 | .0000  | .000 | .0000  | .000  |
| 90.000                      | 419.04 | 418.99 | 6059.82 | 47.28  | .013 | 444.03 | 15689.20 | 936.59  | 135.08 | -3.02  | .3197  | 41.645 | .0000  | .000 | .0000  | .000  |
| 105.000                     | 419.03 | 418.97 | 6059.80 | 54.20  | .015 | 444.30 | 15708.18 | 1074.78 | 135.16 | -3.02  | .3197  | 41.640 | .0000  | .000 | .0000  | .000  |
| 116.761                     | 419.02 | 418.95 | 6059.77 | 59.61  | .017 | 444.50 | 15723.02 | 1183.19 | 106.04 | -2.37  | .3198  | 41.634 | .0000  | .000 | .0000  | .000  |
| 116.771                     | 419.01 | 418.92 | 6059.72 | 69.63  | .020 | 304.61 | 13460.40 | 1183.19 | .00    | -2.00  | .3197  | 41.635 | .0000  | .000 | .0000  | .000  |
| 131.771                     | 419.00 | 418.92 | 6059.75 | 64.02  | .018 | 108.83 | 14676.55 | 1186.15 | .00    | -2.96  | .3197  | 41.635 | .0000  | .000 | .0000  | .000  |
| 143.919                     | 418.98 | 418.90 | 6059.75 | 63.56  | .018 | 443.65 | 15662.86 | 1256.66 | 68.07  | -2.43  | .3197  | 41.628 | .0000  | .000 | .0000  | .000  |
| 158.919                     | 418.96 | 418.87 | 6059.72 | 70.30  | .020 | 444.51 | 15719.85 | 1394.82 | 135.14 | -3.02  | .3198  | 41.622 | .0000  | .000 | .0000  | .000  |
| 173.919                     | 418.94 | 418.83 | 6059.68 | 77.01  | .022 | 445.35 | 15776.55 | 1530.28 | 135.42 | -3.04  | .3198  | 41.616 | .0000  | .000 | .0000  | .000  |
| 188.919                     | 418.92 | 418.79 | 6059.64 | 83.68  | .024 | 446.17 | 15832.76 | 1672.04 | 135.70 | -3.06  | .3199  | 41.610 | .0000  | .000 | .0000  | .000  |
| 203.919                     | 418.90 | 418.74 | 6059.59 | 90.33  | .026 | 446.93 | 15889.09 | 1811.09 | 135.97 | -3.07  | .3200  | 41.604 | .0000  | .000 | .0000  | .000  |
| 218.919                     | 418.88 | 418.69 | 6059.54 | 96.95  | .028 | 447.64 | 15944.92 | 1950.41 | 136.23 | -3.09  | .3201  | 41.598 | .0000  | .000 | .0000  | .000  |
| 233.919                     | 418.85 | 418.64 | 6059.49 | 103.54 | .029 | 448.33 | 16000.47 | 2090.00 | 136.48 | -3.11  | .3201  | 41.592 | .0000  | .000 | .0000  | .000  |
| 248.919                     | 418.83 | 418.59 | 6059.44 | 110.10 | .031 | 448.98 | 16055.73 | 2229.84 | 136.72 | -3.12  | .3202  | 41.586 | .0000  | .000 | .0000  | .000  |
| 263.919                     | 418.80 | 418.53 | 6059.38 | 116.64 | .033 | 449.60 | 16110.70 | 2369.93 | 136.95 | -3.14  | .3203  | 41.579 | .0000  | .000 | .0000  | .000  |
| 278.919                     | 418.76 | 418.47 | 6059.32 | 123.14 | .035 | 450.19 | 16165.38 | 2510.25 | 137.16 | -3.16  | .3204  | 41.573 | .0000  | .000 | .0000  | .000  |
| 293.919                     | 418.73 | 418.40 | 6059.26 | 129.62 | .037 | 450.74 | 16219.77 | 2650.79 | 137.37 | -3.17  | .3204  | 41.566 | .0000  | .000 | .0000  | .000  |
| 308.919                     | 418.70 | 418.33 | 6059.19 | 136.07 | .039 | 451.27 | 16273.87 | 2791.54 | 137.56 | -3.19  | .3205  | 41.560 | .0000  | .000 | .0000  | .000  |
| 323.919                     | 418.66 | 418.26 | 6059.12 | 142.49 | .040 | 451.75 | 16327.59 | 2932.50 | 137.75 | -3.21  | .3206  | 41.553 | .0000  | .000 | .0000  | .000  |
| 338.919                     | 418.62 | 418.19 | 6059.05 | 148.88 | .042 | 452.21 | 16381.21 | 3073.66 | 137.94 | -3.22  | .3207  | 41.546 | .0000  | .000 | .0000  | .000  |
| 353.919                     | 418.58 | 418.11 | 6058.97 | 155.25 | .044 | 452.64 | 16434.45 | 3215.02 | 138.12 | -3.24  | .3208  | 41.539 | .0000  | .000 | .0000  | .000  |
| 368.919                     | 418.54 | 418.03 | 6058.89 | 161.60 | .046 | 453.03 | 16487.40 | 3356.56 | 138.29 | -3.25  | .3209  | 41.533 | .0000  | .000 | .0000  | .000  |
| 383.919                     | 418.49 | 417.94 | 6058.81 | 167.94 | .048 | 453.39 | 16540.41 | 3498.89 | 139.39 | -2.94  | .3210  | 41.526 | .0000  | .000 | .0000  | .000  |
| 398.919                     | 418.46 | 417.88 | 6058.76 | 172.06 | .049 | 396.92 | 16581.33 | 3593.02 | 91.35  | -2.77  | .3211  | 41.484 | .0000  | .000 | .0000  | .000  |
| 413.048                     | 418.46 | 417.87 | 6058.75 | 172.54 | .049 | 170.13 | 16606.79 | 3608.50 | 15.85  | .17    | .3211  | 41.462 | .0000  | .000 | .0000  | .000  |
| 418.048                     | 418.47 | 417.87 | 6058.73 | 174.18 | .050 | .00    | 16465.73 | 3611.89 | .00    | -3.39  | .3211  | 41.192 | .0000  | .000 | .0000  | .000  |
| 427.051                     | 418.48 | 417.87 | 6058.71 | 175.67 | .050 | .00    | 16381.95 | 3613.97 | .00    | -2.09  | .3211  | 41.174 | .0000  | .000 | .0000  | .000  |
| 427.061                     | 418.46 | 417.84 | 6058.29 | 204.08 | .058 | .00    | 14067.75 | 3613.97 | .00    | -2.00  | .3210  | 41.029 | .0000  | .000 | .0000  | .000  |
| 442.061                     | 418.39 | 417.64 | 6058.41 | 195.87 | .056 | -15.67 | 14670.66 | 3617.04 | .00    | -3.07  | .3204  | 41.524 | .0000  | .000 | .0000  | .000  |
| 457.061                     | 418.31 | 417.61 | 6058.50 | 190.34 | .054 | 318.50 | 15303.06 | 3666.13 | 46.13  | -2.96  | .3195  | 41.492 | .0000  | .000 | .0000  | .000  |
| 472.061                     | 418.27 | 417.57 | 6058.51 | 189.57 | .054 | 442.34 | 15570.57 | 3714.71 | 47.35  | -1.22  | .3192  | 41.450 | .0000  | .000 | .0000  | .000  |
| 487.061                     | 418.22 | 417.47 | 6058.41 | 196.09 | .056 | 442.91 | 15613.15 | 3852.20 | 134.50 | -3.00  | .3193  | 41.430 | .0000  | .000 | .0000  | .000  |
| 502.061                     | 418.16 | 417.36 | 6058.31 | 202.60 | .058 | 443.48 | 15655.52 | 3989.89 | 134.68 | -3.01  | .3193  | 41.420 | .0000  | .000 | .0000  | .000  |
| 517.061                     | 418.11 | 417.25 | 6058.20 | 209.09 | .059 | 444.06 | 15697.68 | 4127.77 | 134.87 | -3.01  | .3193  | 41.410 | .0000  | .000 | .0000  | .000  |
| 532.061                     | 418.05 | 417.14 | 6058.10 | 215.56 | .061 | 444.63 | 15739.62 | 4265.85 | 135.05 | -3.02  | .3194  | 41.399 | .0000  | .000 | .0000  | .000  |
| 547.061                     | 417.99 | 417.02 | 6057.99 | 222.02 | .063 | 445.20 | 15781.34 | 4404.12 | 135.25 | -3.03  | .3194  | 41.389 | .0000  | .000 | .0000  | .000  |
| 562.061                     | 417.93 | 416.91 | 6057.87 | 228.46 | .065 | 445.78 | 15822.85 | 4542.61 | 135.44 | -3.04  | .3195  | 41.379 | .0000  | .000 | .0000  | .000  |
| 577.061                     | 417.86 | 416.78 | 6057.76 | 234.89 | .067 | 446.35 | 15864.14 | 4681.29 | 135.64 | -3.05  | .3195  | 41.368 | .0000  | .000 | .0000  | .000  |
| 592.061                     | 417.80 | 416.66 | 6057.64 | 241.30 | .069 | 446.92 | 15905.22 | 4820.19 | 135.84 | -3.06  | .3196  | 41.358 | .0000  | .000 | .0000  | .000  |
| 607.061                     | 417.73 | 416.53 | 6057.52 | 247.70 | .071 | 447.50 | 15946.08 | 4959.29 | 136.04 | -3.06  | .3196  | 41.347 | .0000  | .000 | .0000  | .000  |
| 622.061                     | 417.66 | 416.40 | 6057.39 | 254.04 | .072 | 448.07 | 15986.73 | 5098.59 | 136.23 | -3.07  | .3197  | 41.337 | .0000  | .000 | .0000  | .000  |



|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDDT<br>LB/SEC | AD<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | *SLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+02                            | 4.1902+02  | 4.1895+02 | 6.0598+03   | 5.6941+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1832+03       |
| AFT     | 1.1677+02                            | 4.1899+02  | 4.1892+02 | 6.0597+03   | 5.6944+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1832+03       |

GAS BUILDUP IN SLOT, DW/DT = -2.2728-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 4.1848+02 | 4.1787+02 | 6.0587+03 | 1.7516+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.6140+03 |
| AFT     | 4.2706+02 | 4.1824+02 | 4.1764+02 | 6.0583+03 | 1.7524+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.6140+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.2590-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 4.1700+02 | 4.1519+02 | 6.0563+03 | 3.3484+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.2518+03 |
| AFT     | 7.4635+02 | 4.1640+02 | 4.1459+02 | 6.0552+03 | 3.0523+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.2518+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.2540-03

|                                |          |            |   |     |         |        |         |      |        |
|--------------------------------|----------|------------|---|-----|---------|--------|---------|------|--------|
| WEB BURNOUT INCREMENT LOCATION | 368.9190 | SECTOR NO. | 1 | TAU | 41.7103 | TAUWDP | 41.7103 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 368.9190 | SECTOR NO. | 2 | TAU | 41.7103 | TAUWDP | 41.7103 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 368.9190 | SECTOR NO. | 3 | TAU | 41.7103 | TAUWDP | 41.7103 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 1 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 2 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 3 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 4 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 5 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 6 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 7 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 383.9190 | SECTOR NO. | 8 | TAU | 41.6020 | TAUWDP | 41.6020 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 398.9190 | SECTOR NO. | 5 | TAU | 41.4938 | TAUWDP | 41.4938 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 398.9190 | SECTOR NO. | 6 | TAU | 41.4938 | TAUWDP | 41.4938 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 398.9190 | SECTOR NO. | 7 | TAU | 41.4938 | TAUWDP | 41.4938 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 398.9190 | SECTOR NO. | 8 | TAU | 41.4938 | TAUWDP | 41.4938 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 398.9190 | SECTOR NO. | 1 | TAU | 41.4640 | TAUWDP | 41.4640 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 403.0480 | SECTOR NO. | 6 | TAU | 41.4640 | TAUWDP | 41.4640 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 403.0480 | SECTOR NO. | 7 | TAU | 41.4640 | TAUWDP | 41.4640 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 726.1910 | SECTOR NO. | 2 | TAU | 41.4640 | TAUWDP | 41.4640 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 726.1910 | SECTOR NO. | 3 | TAU | 41.4640 | TAUWDP | 41.4640 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 726.1910 | SECTOR NO. | 4 | TAU | 41.2527 | TAUWDP | 41.2527 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 791.3460 | SECTOR NO. | 5 | TAU | 41.2527 | TAUWDP | 41.2527 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 791.3460 | SECTOR NO. | 6 | TAU | 41.2527 | TAUWDP | 41.2527 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 791.3460 | SECTOR NO. | 7 | TAU | 41.2527 | TAUWDP | 41.2527 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 791.3460 | SECTOR NO. | 8 | TAU | 41.2527 | TAUWDP | 41.2527 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 1 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 2 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 3 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 4 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 5 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 6 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |
| WEB BURNOUT INCREMENT LOCATION | 794.8310 | SECTOR NO. | 7 | TAU | 41.2700 | TAUWDP | 41.2700 | TIME | 111.00 |



| ALB BURNOUT INCREMENT | LOCATION                                                                                                     | SECTOR NO. | TAU           | TAUWDP           | TIME          |
|-----------------------|--------------------------------------------------------------------------------------------------------------|------------|---------------|------------------|---------------|
| ALB BURNOUT INCREMENT | 368.9190                                                                                                     | 5          | TAU = 41.7103 | TAUWDP = 41.7103 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 368.9190                                                                                                     | 6          | TAU = 41.7103 | TAUWDP = 41.7103 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 368.9190                                                                                                     | 7          | TAU = 41.7103 | TAUWDP = 41.7103 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 368.9190                                                                                                     | 8          | TAU = 41.7103 | TAUWDP = 41.7103 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 703.2040                                                                                                     | 2          | TAU = 41.6301 | TAUWDP = 41.6301 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 703.2040                                                                                                     | 3          | TAU = 41.6301 | TAUWDP = 41.6301 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 1          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 2          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 3          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 4          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 5          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 7          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 718.2040                                                                                                     | 8          | TAU = 41.5217 | TAUWDP = 41.5217 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 726.1910                                                                                                     | 1          | TAU = 41.4640 | TAUWDP = 41.4640 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 726.1910                                                                                                     | 4          | TAU = 41.4640 | TAUWDP = 41.4640 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 726.1910                                                                                                     | 5          | TAU = 41.4640 | TAUWDP = 41.4640 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 726.1910                                                                                                     | 6          | TAU = 41.4640 | TAUWDP = 41.4640 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 726.1910                                                                                                     | 7          | TAU = 41.4640 | TAUWDP = 41.4640 | TIME = 111.50 |
| ALB BURNOUT INCREMENT | 726.1910                                                                                                     | 8          | TAU = 41.4640 | TAUWDP = 41.4640 | TIME = 111.50 |
| *PARTBN* TIME=112.00  | IS=2 ZCALC( 25)= 338.92 ZCALC( 24)= 323.92 AINCW= 337.83 AINCHI= 323.92 DELZ= 13.909 ALP=453.75 ALPHI=453.46 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=3 ZCALC( 25)= 338.92 ZCALC( 24)= 323.92 AINCW= 339.03 AINCHI= 323.92 DELZ= 15.107 ALP=453.75 ALPHI=453.43 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=1 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 344.20 AINCHI= 338.92 DELZ= 5.283 ALP=453.74 ALPHI=453.65  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=4 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 345.96 AINCHI= 338.92 DELZ= 7.040 ALP=453.74 ALPHI=453.61  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=5 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 354.22 AINCHI= 338.92 DELZ= 15.305 ALP=453.73 ALPHI=453.43 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=8 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 353.36 AINCHI= 338.92 DELZ= 14.445 ALP=453.73 ALPHI=453.45 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=6 ZCALC( 27)= 368.92 ZCALC( 26)= 353.92 AINCW= 356.66 AINCHI= 353.92 DELZ= 2.742 ALP=453.73 ALPHI=453.69  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=7 ZCALC( 27)= 368.92 ZCALC( 26)= 353.92 AINCW= 356.18 AINCHI= 353.92 DELZ= 2.263 ALP=453.73 ALPHI=453.70  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=1 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 440.06 DELZ= 1.996 ALP=23.56 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=2 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 440.73 DELZ= 1.331 ALP=24.62 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=3 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 440.60 DELZ= 1.456 ALP=24.42 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=4 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 439.88 DELZ= 2.179 ALP=23.27 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=5 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 439.02 DELZ= 3.036 ALP=21.91 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=6 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 438.77 DELZ= 3.290 ALP=21.51 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=7 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 438.82 DELZ= 3.240 ALP=21.58 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=8 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 439.11 DELZ= 2.947 ALP=22.05 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=2 ZCALC( 52)= 703.20 ZCALC( 51)= 688.20 AINCW= 698.79 AINCHI= 688.20 DELZ= 10.584 ALP=453.74 ALPHI=453.39 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=3 ZCALC( 52)= 703.20 ZCALC( 51)= 688.20 AINCW= 700.03 AINCHI= 688.20 DELZ= 11.824 ALP=453.73 ALPHI=453.34 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=1 ZCALC( 53)= 718.20 ZCALC( 52)= 703.20 AINCW= 705.39 AINCHI= 703.20 DELZ= 2.186 ALP=453.72 ALPHI=453.70  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=4 ZCALC( 53)= 718.20 ZCALC( 52)= 703.20 AINCW= 707.21 AINCHI= 703.20 DELZ= 4.003 ALP=453.72 ALPHI=453.62  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=5 ZCALC( 53)= 718.20 ZCALC( 52)= 703.20 AINCW= 715.77 AINCHI= 703.20 DELZ= 12.562 ALP=453.69 ALPHI=453.28 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=6 ZCALC( 53)= 718.20 ZCALC( 52)= 703.20 AINCW= 718.28 AINCHI= 703.20 DELZ= 15.076 ALP=453.69 ALPHI=453.17 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=7 ZCALC( 53)= 718.20 ZCALC( 52)= 703.20 AINCW= 717.79 AINCHI= 703.20 DELZ= 14.583 ALP=453.69 ALPHI=453.19 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=6 ZCALC( 53)= 718.20 ZCALC( 52)= 703.20 AINCW= 714.87 AINCHI= 703.20 DELZ= 11.669 ALP=453.70 ALPHI=453.31 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=2 ZCALC( 25)= 338.92 ZCALC( 24)= 323.92 AINCW= 337.83 AINCHI= 323.92 DELZ= 13.909 ALP=453.75 ALPHI=453.46 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=3 ZCALC( 25)= 338.92 ZCALC( 24)= 323.92 AINCW= 339.03 AINCHI= 323.92 DELZ= 15.107 ALP=453.75 ALPHI=453.43 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=1 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 344.20 AINCHI= 338.92 DELZ= 5.283 ALP=453.74 ALPHI=453.65  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=4 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 345.96 AINCHI= 338.92 DELZ= 7.040 ALP=453.74 ALPHI=453.61  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=5 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 354.22 AINCHI= 338.92 DELZ= 15.305 ALP=453.73 ALPHI=453.43 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=8 ZCALC( 26)= 353.92 ZCALC( 25)= 338.92 AINCW= 353.36 AINCHI= 338.92 DELZ= 14.445 ALP=453.73 ALPHI=453.45 |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=6 ZCALC( 27)= 368.92 ZCALC( 26)= 353.92 AINCW= 356.66 AINCHI= 353.92 DELZ= 2.742 ALP=453.73 ALPHI=453.69  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=7 ZCALC( 27)= 368.92 ZCALC( 26)= 353.92 AINCW= 356.18 AINCHI= 353.92 DELZ= 2.263 ALP=453.73 ALPHI=453.70  |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=1 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 440.06 DELZ= 1.996 ALP=23.56 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=2 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 440.73 DELZ= 1.331 ALP=24.62 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=3 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 440.60 DELZ= 1.456 ALP=24.42 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=4 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 439.88 DELZ= 2.179 ALP=23.27 ALPHI=000000   |            |               |                  |               |
| *PARTBN* TIME=112.00  | IS=5 ZCALC( 34)= 442.06 ZCALC( 33)= 427.06 AINCW= 442.06 AINCHI= 439.02 DELZ= 3.036 ALP=21.91 ALPHI=000000   |            |               |                  |               |



| PARTIAL | TIME        | 15=6  | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 438.77 | DELZ | 3.290  | ALP | -21.51  | ALPHI | 000000 |
|---------|-------------|-------|-------|-----|--------|-------|-----|--------|-------|--------|-------|--------|------|--------|-----|---------|-------|--------|
| PARTIAL | TIME=112.00 | 15=7  | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 438.82 | DELZ | 3.240  | ALP | -21.58  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=8  | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 439.11 | DELZ | 2.947  | ALP | -22.05  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=9  | ZCALC | 34= | 703.20 | ZCALC | 51= | 688.20 | AINCW | 698.79 | AINCW | 688.20 | DELZ | 10.584 | ALP | -453.74 | ALPHI | 453.39 |
| PARTIAL | TIME=112.00 | 15=10 | ZCALC | 34= | 703.20 | ZCALC | 51= | 688.20 | AINCW | 706.03 | AINCW | 688.20 | DELZ | 11.024 | ALP | -453.73 | ALPHI | 453.34 |
| PARTIAL | TIME=112.00 | 15=11 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 705.39 | AINCW | 703.20 | DELZ | 2.184  | ALP | -453.72 | ALPHI | 453.70 |
| PARTIAL | TIME=112.00 | 15=12 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 707.21 | AINCW | 703.20 | DELZ | 4.003  | ALP | -453.72 | ALPHI | 453.62 |
| PARTIAL | TIME=112.00 | 15=13 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 715.77 | AINCW | 703.20 | DELZ | 12.562 | ALP | -453.69 | ALPHI | 453.28 |
| PARTIAL | TIME=112.00 | 15=14 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 718.28 | AINCW | 703.20 | DELZ | 15.076 | ALP | -453.69 | ALPHI | 453.17 |
| PARTIAL | TIME=112.00 | 15=15 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 717.79 | AINCW | 703.20 | DELZ | 14.583 | ALP | -453.69 | ALPHI | 453.17 |
| PARTIAL | TIME=112.00 | 15=16 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 714.87 | AINCW | 703.20 | DELZ | 11.669 | ALP | -453.70 | ALPHI | 453.31 |
| PARTIAL | TIME=112.00 | 15=17 | ZCALC | 34= | 338.92 | ZCALC | 24= | 323.92 | AINCW | 337.83 | AINCW | 323.92 | DELZ | 13.907 | ALP | -453.75 | ALPHI | 453.46 |
| PARTIAL | TIME=112.00 | 15=18 | ZCALC | 34= | 338.92 | ZCALC | 24= | 323.92 | AINCW | 339.03 | AINCW | 323.92 | DELZ | 15.107 | ALP | -453.75 | ALPHI | 453.43 |
| PARTIAL | TIME=112.00 | 15=19 | ZCALC | 34= | 353.92 | ZCALC | 25= | 338.92 | AINCW | 344.20 | AINCW | 338.92 | DELZ | 5.283  | ALP | -453.74 | ALPHI | 453.65 |
| PARTIAL | TIME=112.00 | 15=20 | ZCALC | 34= | 353.92 | ZCALC | 25= | 338.92 | AINCW | 345.96 | AINCW | 338.92 | DELZ | 7.040  | ALP | -453.74 | ALPHI | 453.61 |
| PARTIAL | TIME=112.00 | 15=21 | ZCALC | 34= | 353.92 | ZCALC | 25= | 338.92 | AINCW | 358.22 | AINCW | 338.92 | DELZ | 15.305 | ALP | -453.73 | ALPHI | 453.43 |
| PARTIAL | TIME=112.00 | 15=22 | ZCALC | 34= | 353.92 | ZCALC | 25= | 338.92 | AINCW | 353.36 | AINCW | 338.92 | DELZ | 14.445 | ALP | -453.73 | ALPHI | 453.45 |
| PARTIAL | TIME=112.00 | 15=23 | ZCALC | 34= | 368.92 | ZCALC | 26= | 353.92 | AINCW | 358.66 | AINCW | 353.92 | DELZ | 2.742  | ALP | -453.73 | ALPHI | 453.69 |
| PARTIAL | TIME=112.00 | 15=24 | ZCALC | 34= | 368.92 | ZCALC | 26= | 353.92 | AINCW | 356.18 | AINCW | 353.92 | DELZ | 2.263  | ALP | -453.73 | ALPHI | 453.70 |
| PARTIAL | TIME=112.00 | 15=25 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 443.06 | DELZ | 1.996  | ALP | -23.56  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=26 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 440.73 | DELZ | 1.331  | ALP | -24.62  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=27 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 440.60 | DELZ | 1.456  | ALP | -24.42  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=28 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 439.88 | DELZ | 2.179  | ALP | -23.27  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=29 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 439.02 | DELZ | 3.036  | ALP | -21.91  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=30 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 438.77 | DELZ | 3.290  | ALP | -21.51  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=31 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 438.82 | DELZ | 3.240  | ALP | -21.58  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=32 | ZCALC | 34= | 442.06 | ZCALC | 33= | 427.06 | AINCW | 442.06 | AINCW | 439.11 | DELZ | 2.947  | ALP | -22.05  | ALPHI | 000000 |
| PARTIAL | TIME=112.00 | 15=33 | ZCALC | 34= | 703.20 | ZCALC | 51= | 688.20 | AINCW | 698.79 | AINCW | 688.20 | DELZ | 10.584 | ALP | -453.74 | ALPHI | 453.39 |
| PARTIAL | TIME=112.00 | 15=34 | ZCALC | 34= | 703.20 | ZCALC | 51= | 688.20 | AINCW | 706.03 | AINCW | 688.20 | DELZ | 11.024 | ALP | -453.73 | ALPHI | 453.34 |
| PARTIAL | TIME=112.00 | 15=35 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 705.39 | AINCW | 703.20 | DELZ | 2.184  | ALP | -453.72 | ALPHI | 453.70 |
| PARTIAL | TIME=112.00 | 15=36 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 707.21 | AINCW | 703.20 | DELZ | 4.003  | ALP | -453.72 | ALPHI | 453.62 |
| PARTIAL | TIME=112.00 | 15=37 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 715.77 | AINCW | 703.20 | DELZ | 12.562 | ALP | -453.69 | ALPHI | 453.28 |
| PARTIAL | TIME=112.00 | 15=38 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 718.28 | AINCW | 703.20 | DELZ | 15.076 | ALP | -453.69 | ALPHI | 453.17 |
| PARTIAL | TIME=112.00 | 15=39 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 717.79 | AINCW | 703.20 | DELZ | 14.583 | ALP | -453.69 | ALPHI | 453.19 |
| PARTIAL | TIME=112.00 | 15=40 | ZCALC | 34= | 718.20 | ZCALC | 52= | 703.20 | AINCW | 714.87 | AINCW | 703.20 | DELZ | 11.669 | ALP | -453.70 | ALPHI | 453.31 |

IGNITION TIME, TIME (S)

112.00000

| PARAMETER DESCRIPTION (UNITS)               | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|---------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                    |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)              | FTDEL                | 6231831.0     | 1400971.3    |
| TOTAL VACUUM THRUST (N,LBF)                 | FTVAC                | 6239538.2     | 1402704.0    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)       | FI                   | 50691.068     | 11395.806    |
| DELIVERED TOTAL IMPULSE (N•S,LBF•S)         | SMMDTI               | .12138900+10  | .27289332+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)         | TISP                 | 255.38169     | 255.38169    |
| VACUUM TOTAL IMPULSE (N•S,LBF•S)            | SRMVTI               | .12638742+10  | .28413023+09 |
| THRUST COEFFICIENT                          | CF                   | 1.6286554     | 1.6286554    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/VS) | WDOT                 | 2464.1862     | 5432.6007    |
| FLOWRATE INTEGRAL (KG,LBM)                  | SWDOTM               | 497642.14     | 1097113.1    |
| INERT MASS FLOWRATE (KG/S,LBM/VS)           | MIF                  | 27.205529     | 59.977924    |
| INERT MASS REMAINING (KG,LBM)               | MIK                  | 94.766180     | 208.92366    |
| TOTAL BURN AREA (M••2,IN••2)                | ABTOT                | 169.78660     | 263479.76    |
| TOTAL PROPELLANT VOLUME (M••3,IN••3)        | VF                   | 6.2030226     | 378531.66    |
| PROPELLANT MASS REMAINING (KG,LBM)          | WF                   | 8248.5675     | 18184.979    |
| TOTAL GAS MASS (KG,LBM)                     | WGTOT                | 855.39248     | 1885.8176    |
| RATIO OF SPECIFIC HEATS                     | GAMA                 | 1.1594827     | 1.1594827    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)  | AMW                  | 12.786047     | 28.188439    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)  | CESTAR               | 1554.7215     | 5100.7925    |
| MAXIMUM CHAMBER MACH NUMBER                 | AMPN                 | .10023089     | .10023089    |
| <b>HEAD END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE (N/M••2,LBF/IN••2)           | PH                   | .24320770+09  | 352.74295    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)    | SPHDT                | .52509492+11  | 76158.580    |
| BURN AREA (M••2,IN••2)                      | AHH                  | 1.8540981     | 2873.8578    |
| BURN RATE (M/S,IN/VS)                       | RBZ(1)               | .76600007-02  | .30157483    |
| DISTANCE BURNED (M,IN)                      | TAU4(1)              | 1.0675680     | 42.030238    |
| PROPELLANT VOLUME (M••3,IN••3)              | VFH                  | .26619719     | 16244.349    |
| GAS VOLUME (M••3,IN••3)                     | VPH                  | 54.837635     | 334637.8     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)        | PRNT(1,3)            | 3354.1435     | 6037.4583    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>      |                      |               |              |
| AXIAL BURN AREA (M••2,IN••2)                | ABCYL                | 168.13250     | 260605.90    |
| SLOPE FACE BURN AREA (M••2,IN••2)           | ABSLOT               | .00300000     | .00000000    |
| PROPELLANT VOLUME (M••3,IN••3)              | VFCYL                | 5.9348592     | 362167.33    |
| GAS VOLUME (M••3,IN••3)                     | VP                   | 278.62828     | 1700294.1    |
| <b>AFT END PARAMETERS:</b>                  |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M••2,LBF/IN••2)   | PON                  | .23938316+09  | 347.19593    |
| PRESSURE INTEGRAL (N•S/M••2,LBF•S/IN••2)    | SPONDT               | .50107104+11  | 72674.211    |
| BURN AREA (M••2,IN••2)                      | AAH                  | .00300000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)            | RBZ(NI+1,1)          | .76339393-02  | .30054879    |
| BURN RATE, REGION B (M/S,IN/SEC)            | RBZ(NI+2,1)          | .76271724-02  | .30028317    |
| DISTANCE BURNED, REGION A (M,IN)            | TAU4(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)            | TAU4(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M••3,IN••3)              | VFN                  | .19662722-02  | .119.98929   |
| GAS VOLUME (M••3,IN••3)                     | VPN                  | 17.347463     | 104030.0     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)      | PRNT(NI+2,3)         | 3353.0655     | 6035.5179    |
| PORT AREA, NOZ ENT (M••2,IN••2)             | AZA                  | 10.258839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                   |                      |               |              |
| THROAT AREA (M••2,IN••2)                    | AT                   | 1.6004040     | 2480.6312    |
| EXPANSION RATIO                             | EPR                  | 6.7161259     | 6.7161259    |
| PRESSURE RATIO                              | PEPU                 | .23524305-01  | .23524305-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>            |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT           | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS               | ANLPS                | 3.0000000     | 3.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY



INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | PSIA    | DEG. R | T | U      | M    | LP     | INCHES   | SQ. IN. | WDOT    | LB/SEC | DM/DT  | RH     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|---|--------|------|--------|----------|---------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   |        |         |        |   | FT/SEC |      |        |          |         |         | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE                        | 352.74 | 352.74 | 6037.46 | 6.67   |   |        | .002 | 444.43 | 15714.26 |         | 111.57  | 54.90  | -56.67 | .3011  | 42.030 | .0000  | .000  |
| 15.000                      | 352.74 | 352.74 | 6037.45 | 14.48  |   |        | .004 | 444.69 | 15733.57 |         | 242.77  | 127.39 | -3.82  | .3011  | 41.984 | .0000  | .000  |
| 30.000                      | 352.74 | 352.73 | 6037.44 | 22.29  |   |        | .006 | 444.96 | 15752.05 |         | 374.06  | 127.47 | -3.82  | .3011  | 41.979 | .0000  | .000  |
| 45.000                      | 352.73 | 352.72 | 6037.42 | 30.08  |   |        | .009 | 445.22 | 15772.08 |         | 505.45  | 127.56 | -3.83  | .3011  | 41.975 | .0000  | .000  |
| 60.000                      | 352.73 | 352.70 | 6037.40 | 37.86  |   |        | .011 | 445.48 | 15791.27 |         | 636.92  | 127.64 | -3.83  | .3012  | 41.970 | .0000  | .000  |
| 75.000                      | 352.72 | 352.69 | 6037.38 | 45.63  |   |        | .013 | 445.75 | 15810.42 |         | 768.49  | 127.73 | -3.84  | .3012  | 41.965 | .0000  | .000  |
| 90.000                      | 352.71 | 352.66 | 6037.35 | 53.39  |   |        | .015 | 446.01 | 15829.52 |         | 900.15  | 127.82 | -3.84  | .3012  | 41.960 | .0000  | .000  |
| 105.000                     | 352.70 | 352.64 | 6037.31 | 61.13  |   |        | .017 | 446.28 | 15848.59 |         | 1031.90 | 127.91 | -3.85  | .3012  | 41.955 | .0000  | .000  |
| 116.761                     | 352.69 | 352.61 | 6037.28 | 67.25  |   |        | .019 | 446.48 | 15863.51 |         | 1163.27 | 100.35 | -3.02  | .3013  | 41.950 | .0000  | .000  |
| 118.771                     | 352.68 | 352.58 | 6037.21 | 79.80  |   |        | .023 | 340.45 | 13358.69 |         | 1135.28 | .00    | .00    | .3013  | 41.951 | .0000  | .000  |
| 131.771                     | 352.67 | 352.50 | 6037.25 | 72.71  |   |        | .021 | 93.89  | 14728.41 |         | 1138.90 | .00    | -3.62  | .3012  | 41.951 | .0000  | .000  |
| 143.919                     | 352.64 | 352.56 | 6037.26 | 71.58  |   |        | .020 | 446.64 | 15803.04 |         | 1204.58 | 62.63  | -3.05  | .3012  | 41.943 | .0000  | .000  |
| 158.919                     | 352.63 | 352.52 | 6037.22 | 79.17  |   |        | .023 | 446.53 | 15852.14 |         | 1336.32 | 127.89 | -3.85  | .3013  | 41.937 | .0000  | .000  |
| 173.919                     | 352.61 | 352.46 | 6037.17 | 86.74  |   |        | .025 | 447.35 | 15900.98 |         | 1468.36 | 128.17 | -3.87  | .3014  | 41.932 | .0000  | .000  |
| 188.919                     | 352.59 | 352.44 | 6037.11 | 94.28  |   |        | .027 | 448.14 | 15949.57 |         | 1600.69 | 128.43 | -3.90  | .3014  | 41.926 | .0000  | .000  |
| 203.919                     | 352.56 | 352.39 | 6037.06 | 101.79 |   |        | .029 | 448.88 | 15997.91 |         | 1733.30 | 128.68 | -3.92  | .3015  | 41.920 | .0000  | .000  |
| 218.919                     | 352.54 | 352.34 | 6036.99 | 109.28 |   |        | .031 | 449.57 | 16046.00 |         | 1866.16 | 128.92 | -3.94  | .3016  | 41.914 | .0000  | .000  |
| 233.919                     | 352.51 | 352.29 | 6036.93 | 116.74 |   |        | .033 | 450.22 | 16093.84 |         | 1999.27 | 129.15 | -3.97  | .3016  | 41.908 | .0000  | .000  |
| 248.919                     | 352.48 | 352.23 | 6036.86 | 124.16 |   |        | .035 | 450.83 | 16141.42 |         | 2132.62 | 129.36 | -3.99  | .3017  | 41.902 | .0000  | .000  |
| 263.919                     | 352.45 | 352.17 | 6036.79 | 131.60 |   |        | .037 | 451.39 | 16188.76 |         | 2266.19 | 129.55 | -4.01  | .3018  | 41.895 | .0000  | .000  |
| 278.919                     | 352.42 | 352.10 | 6036.71 | 138.99 |   |        | .040 | 451.91 | 16235.84 |         | 2399.96 | 129.74 | -4.04  | .3019  | 41.889 | .0000  | .000  |
| 293.919                     | 352.39 | 352.03 | 6036.63 | 146.35 |   |        | .042 | 452.39 | 16282.68 |         | 2533.95 | 129.92 | -4.06  | .3020  | 41.882 | .0000  | .000  |
| 308.919                     | 352.35 | 351.96 | 6036.54 | 153.69 |   |        | .044 | 452.82 | 16329.26 |         | 2668.13 | 130.10 | -4.08  | .3021  | 41.876 | .0000  | .000  |
| 323.919                     | 352.31 | 351.88 | 6036.45 | 161.00 |   |        | .046 | 453.21 | 16375.59 |         | 2802.49 | 130.26 | -4.10  | .3022  | 41.869 | .0000  | .000  |
| 338.919                     | 352.27 | 351.80 | 6036.36 | 168.23 |   |        | .048 | 453.55 | 16421.30 |         | 2935.91 | 129.33 | -4.09  | .3023  | 41.862 | .0000  | .000  |
| 353.919                     | 352.25 | 351.75 | 6036.30 | 172.55 |   |        | .049 | 453.84 | 16460.81 |         | 3069.06 | 78.10  | -4.05  | .3023  | 41.814 | .0000  | .000  |
| 368.919                     | 352.24 | 351.75 | 6036.30 | 172.86 |   |        | .049 | 113.43 | 16522.97 |         | 3027.70 | 5.42   | -4.22  | .3023  | 41.710 | .0000  | .000  |
| 383.919                     | 352.24 | 351.75 | 6036.30 | 172.32 |   |        | .049 | .00    | 16558.41 |         | 3031.88 | .00    | -4.18  | .3023  | 41.602 | .0000  | .000  |
| 398.919                     | 352.24 | 351.75 | 6036.31 | 172.09 |   |        | .049 | .00    | 16603.49 |         | 3036.07 | .00    | -4.19  | .3023  | 41.494 | .0000  | .000  |
| 413.919                     | 352.25 | 351.75 | 6036.31 | 172.03 |   |        | .049 | .00    | 16615.85 |         | 3037.23 | .00    | -1.16  | .3023  | 41.464 | .0000  | .000  |
| 428.919                     | 352.25 | 351.75 | 6036.28 | 173.80 |   |        | .049 | .00    | 16469.10 |         | 3041.42 | .00    | -4.20  | .3023  | 41.192 | .0000  | .000  |
| 443.919                     | 352.25 | 351.75 | 6036.27 | 174.87 |   |        | .050 | .00    | 16381.95 |         | 3043.92 | .00    | -2.50  | .3023  | 41.174 | .0000  | .000  |
| 458.919                     | 352.24 | 351.56 | 6035.84 | 203.73 |   |        | .058 | .00    | 14067.75 |         | 3043.93 | .00    | .00    | .3022  | 41.029 | .0000  | .000  |
| 473.919                     | 352.18 | 351.56 | 6035.98 | 194.85 |   |        | .055 | -22.87 | 14726.76 |         | 3047.63 | .00    | -3.71  | .3020  | 41.840 | .0000  | .000  |
| 488.919                     | 352.11 | 351.52 | 6036.07 | 188.95 |   |        | .054 | 317.70 | 15417.85 |         | 3093.58 | 42.23  | -3.71  | .3011  | 41.808 | .0000  | .000  |
| 503.919                     | 352.07 | 351.49 | 6036.08 | 180.22 |   |        | .054 | 444.32 | 15710.14 |         | 3139.81 | 44.66  | -1.55  | .3007  | 41.765 | .0000  | .000  |
| 518.919                     | 352.02 | 351.39 | 6035.97 | 195.63 |   |        | .056 | 444.84 | 15749.77 |         | 3270.87 | 127.26 | -3.81  | .3008  | 41.744 | .0000  | .000  |
| 533.919                     | 351.97 | 351.29 | 6035.85 | 203.03 |   |        | .058 | 445.42 | 15769.21 |         | 3402.13 | 127.43 | -3.82  | .3008  | 41.735 | .0000  | .000  |
| 548.919                     | 351.92 | 351.19 | 6035.73 | 210.41 |   |        | .060 | 446.00 | 15820.44 |         | 3533.59 | 127.62 | -3.84  | .3009  | 41.725 | .0000  | .000  |
| 563.919                     | 351.87 | 351.08 | 6035.61 | 217.77 |   |        | .062 | 446.58 | 15867.47 |         | 3665.26 | 127.81 | -3.86  | .3009  | 41.714 | .0000  | .000  |
| 578.919                     | 351.81 | 350.97 | 6035.48 | 225.13 |   |        | .064 | 447.16 | 15926.29 |         | 3797.13 | 128.00 | -3.87  | .3010  | 41.704 | .0000  | .000  |
| 593.919                     | 351.75 | 350.86 | 6035.35 | 232.46 |   |        | .066 | 447.74 | 15984.92 |         | 3929.21 | 128.19 | -3.89  | .3010  | 41.694 | .0000  | .000  |
| 608.919                     | 351.69 | 350.74 | 6035.22 | 239.78 |   |        | .068 | 448.32 | 15983.34 |         | 4061.49 | 128.37 | -3.91  | .3011  | 41.684 | .0000  | .000  |
| 623.919                     | 351.63 | 350.62 | 6035.08 | 247.09 |   |        | .070 | 448.90 | 16021.56 |         | 4193.97 | 128.56 | -3.92  | .3011  | 41.673 | .0000  | .000  |
| 638.919                     | 351.57 | 350.50 | 6034.94 | 254.39 |   |        | .072 | 449.48 | 16059.56 |         | 4326.65 | 128.75 | -3.94  | .3012  | 41.663 | .0000  | .000  |
| 653.919                     | 351.50 | 350.37 | 6034.79 | 261.68 |   |        | .074 | 450.06 | 16097.39 |         | 4459.54 | 128.93 | -3.95  | .3012  | 41.652 | .0000  | .000  |

|          |        |        |         |        |      |        |          |         |        |       |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-------|-------|--------|-------|------|
| 628.204  | 351.43 | 350.24 | 6034.64 | 268.95 | .077 | 450.64 | 16135.00 | 4592.63 | 129.12 | -3.97 | .3013 | 41.641 | .0000 | .000 |
| 643.204  | 351.36 | 350.11 | 6034.49 | 276.22 | .079 | 451.21 | 16172.41 | 4725.92 | 129.31 | -3.98 | .3013 | 41.631 | .0000 | .000 |
| 658.204  | 351.29 | 349.97 | 6034.33 | 283.47 | .081 | 451.79 | 16209.62 | 4859.42 | 129.50 | -4.00 | .3014 | 41.620 | .0000 | .000 |
| 673.204  | 351.22 | 349.83 | 6034.17 | 290.72 | .083 | 452.37 | 16246.63 | 4993.14 | 129.70 | -4.02 | .3015 | 41.609 | .0000 | .000 |
| 688.204  | 351.14 | 349.68 | 6034.00 | 297.96 | .085 | 452.94 | 16283.43 | 5127.06 | 129.90 | -4.03 | .3015 | 41.598 | .0000 | .000 |
| 703.204  | 351.07 | 349.54 | 6033.84 | 304.74 | .087 | 453.47 | 16319.95 | 5252.90 | 121.79 | -4.05 | .3016 | 41.581 | .0000 | .000 |
| 718.204  | 351.03 | 349.46 | 6033.76 | 312.25 | .088 | 454.00 | 16347.11 | 5321.86 | 64.91  | -4.04 | .3016 | 41.522 | .0000 | .000 |
| 726.191  | 351.02 | 349.46 | 6033.77 | 327.84 | .088 | .00    | 16375.73 | 5344.03 | .00    | -2.17 | .3016 | 41.464 | .0000 | .000 |
| 741.191  | 351.02 | 349.46 | 6033.76 | 307.94 | .088 | .00    | 16382.80 | 5328.10 | .00    | -4.07 | .3016 | 41.140 | .0000 | .000 |
| 746.336  | 351.02 | 349.46 | 6033.76 | 307.98 | .088 | .00    | 16385.20 | 5329.50 | .00    | -1.41 | .3016 | 41.240 | .0000 | .000 |
| 746.346  | 350.99 | 348.95 | 6032.62 | 352.12 | .150 | .00    | 14349.56 | 5329.51 | .00    | .00   | .3014 | 41.029 | .0000 | .000 |
| 761.346  | 350.83 | 348.95 | 6033.01 | 337.73 | .096 | .00    | 14972.15 | 5333.19 | .00    | -3.69 | .3014 | 41.104 | .0000 | .000 |
| 776.346  | 350.68 | 348.95 | 6033.36 | 324.45 | .092 | .00    | 15597.03 | 5337.04 | .00    | -3.84 | .3014 | 41.178 | .0000 | .000 |
| 791.346  | 350.55 | 348.95 | 6033.66 | 312.16 | .087 | .00    | 16224.19 | 5341.04 | .00    | -4.00 | .3014 | 41.253 | .0000 | .000 |
| 794.631  | 350.52 | 348.95 | 6033.73 | 309.44 | .088 | .00    | 16370.23 | 5341.99 | .00    | -.95  | .3014 | 41.270 | .0000 | .000 |
| 807.631  | 350.53 | 348.95 | 6033.72 | 309.80 | .088 | .00    | 16363.57 | 5346.11 | .00    | -4.12 | .3014 | 41.093 | .0000 | .000 |
| 821.631  | 350.53 | 348.95 | 6033.71 | 315.16 | .088 | .00    | 16356.92 | 5350.22 | .00    | -4.11 | .3014 | 40.916 | .0000 | .000 |
| 839.631  | 350.53 | 348.95 | 6033.70 | 310.53 | .088 | .00    | 16350.28 | 5354.33 | .00    | -4.11 | .3014 | 40.739 | .0000 | .000 |
| 854.781  | 350.54 | 348.95 | 6033.69 | 312.89 | .088 | .00    | 16343.67 | 5358.43 | .00    | -4.10 | .3014 | 40.563 | .0000 | .000 |
| 869.781  | 350.55 | 348.95 | 6033.67 | 311.66 | .089 | .00    | 16335.82 | 5362.54 | .00    | -4.11 | .3014 | 39.794 | .0000 | .000 |
| 884.781  | 350.55 | 348.95 | 6033.66 | 312.43 | .089 | .00    | 16287.76 | 5366.64 | .00    | -4.10 | .3014 | 39.025 | .0000 | .000 |
| 897.781  | 350.56 | 348.95 | 6033.64 | 313.20 | .089 | .00    | 16260.09 | 5370.73 | .00    | -4.09 | .3014 | 38.255 | .0000 | .000 |
| 912.781  | 350.57 | 348.95 | 6033.62 | 313.98 | .089 | .00    | 16232.22 | 5374.81 | .00    | -4.09 | .3014 | 37.486 | .0000 | .000 |
| 927.781  | 350.58 | 348.95 | 6033.60 | 314.76 | .090 | .00    | 16204.33 | 5378.89 | .00    | -4.08 | .3014 | 36.717 | .0000 | .000 |
| 942.781  | 350.59 | 348.95 | 6033.58 | 315.54 | .090 | .00    | 16176.44 | 5382.96 | .00    | -4.07 | .3014 | 35.948 | .0000 | .000 |
| 957.781  | 350.59 | 348.95 | 6033.56 | 316.32 | .090 | .00    | 16148.55 | 5387.03 | .00    | -4.06 | .3014 | 35.178 | .0000 | .000 |
| 972.781  | 350.60 | 348.95 | 6033.54 | 317.10 | .090 | .00    | 16120.65 | 5391.09 | .00    | -4.06 | .3014 | 34.409 | .0000 | .000 |
| 987.781  | 350.61 | 348.95 | 6033.52 | 317.89 | .090 | .00    | 16092.74 | 5395.14 | .00    | -4.05 | .3014 | 33.640 | .0000 | .000 |
| 1001.781 | 350.62 | 348.95 | 6033.50 | 318.68 | .091 | .00    | 16064.82 | 5399.18 | .00    | -4.04 | .3014 | 32.871 | .0000 | .000 |
| 1016.781 | 350.63 | 348.95 | 6033.48 | 319.47 | .091 | .00    | 16036.89 | 5403.22 | .00    | -4.04 | .3014 | 32.101 | .0000 | .000 |
| 1031.781 | 350.64 | 348.95 | 6033.46 | 320.27 | .091 | .00    | 16008.96 | 5407.25 | .00    | -4.03 | .3014 | 31.332 | .0000 | .000 |
| 1046.781 | 350.64 | 348.95 | 6033.45 | 320.59 | .091 | .00    | 15997.77 | 5408.86 | .00    | -1.61 | .3014 | 31.024 | .0000 | .000 |
| 1055.771 | 350.65 | 348.95 | 6033.43 | 321.39 | .091 | .00    | 15969.84 | 5412.88 | .00    | -4.02 | .3014 | 30.463 | .0000 | .000 |
| 1070.791 | 350.66 | 348.95 | 6033.41 | 322.19 | .092 | .00    | 15941.80 | 5416.89 | .00    | -4.01 | .3014 | 29.942 | .0000 | .000 |
| 1084.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1099.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1114.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1129.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1144.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1159.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1174.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1189.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1204.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1219.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1234.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1249.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1264.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1279.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1294.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1309.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1324.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1339.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1354.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1369.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1384.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1399.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1414.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1429.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1444.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1459.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1474.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1489.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1504.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1519.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1534.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1549.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1564.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1579.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1594.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1609.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1624.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1639.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1654.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1669.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1684.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1699.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1714.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1729.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 | .3014 | 29.459 | .0000 | .000 |
| 1744.771 | 350.66 | 348.95 | 6033.40 | 322.91 | .092 | .00    | 15913.69 | 5420.46 | .00    | -3.57 |       |        |       |      |

|                                         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|-----------------------------------------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD                                 | 1.1676+02                            | 3.5269+02  | 3.5261+02 | 6.0373+03   | 6.4761+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1353+03       |
| AFT                                     | 1.1677+02                            | 3.5265+02  | 3.5258+02 | 6.0372+03   | 6.4766+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1353+03       |
| GAS BUILDUP IN SLOT, DW/DT = -2.7922-03 |                                      |            |           |             |             |               |                 |               |              |                     |                 |

|                                         |           |           |           |           |           |           |        |        |        |        |           |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD                                 | 4.2705+02 | 3.5225+02 | 3.5175+02 | 6.0363+03 | 1.7485+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.0439+03 |
| AFT                                     | 4.2706+02 | 3.5206+02 | 3.5156+02 | 6.0358+03 | 1.7494+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.0439+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.7707-03 |           |           |           |           |           |           |        |        |        |        |           |

|                                         |           |           |           |           |           |           |        |        |        |        |           |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD                                 | 7.4634+02 | 3.5102+02 | 3.4946+02 | 6.0338+03 | 3.0802+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5.3295+03 |
| AFT                                     | 7.4635+02 | 3.5051+02 | 3.4895+02 | 6.0326+03 | 3.0842+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5.3295+03 |
| GAS BUILDUP IN SLOT, DW/DT = -2.7506-03 |           |           |           |           |           |           |        |        |        |        |           |

|                                                                                                                                  |          |            |   |     |         |        |         |      |        |
|----------------------------------------------------------------------------------------------------------------------------------|----------|------------|---|-----|---------|--------|---------|------|--------|
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 323.9190 | SECTOR NO. | 1 | TAU | 42.0350 | TAUWDP | 42.0350 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 323.9190 | SECTOR NO. | 2 | TAU | 42.0350 | TAUWDP | 42.0350 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 323.9190 | SECTOR NO. | 3 | TAU | 42.0350 | TAUWDP | 42.0350 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 323.9190 | SECTOR NO. | 4 | TAU | 42.0350 | TAUWDP | 42.0350 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 1 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 3 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 4 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 5 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 6 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 7 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 338.9190 | SECTOR NO. | 8 | TAU | 41.9268 | TAUWDP | 41.9268 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 353.9190 | SECTOR NO. | 5 | TAU | 41.8185 | TAUWDP | 41.8185 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 353.9190 | SECTOR NO. | 6 | TAU | 41.8185 | TAUWDP | 41.8185 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 353.9190 | SECTOR NO. | 7 | TAU | 41.8185 | TAUWDP | 41.8185 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 442.0610 | SECTOR NO. | 1 | TAU | 41.9981 | TAUWDP | 41.9981 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 442.0610 | SECTOR NO. | 2 | TAU | 41.9981 | TAUWDP | 41.9981 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 442.0610 | SECTOR NO. | 3 | TAU | 41.9981 | TAUWDP | 41.9981 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 442.0610 | SECTOR NO. | 4 | TAU | 41.9981 | TAUWDP | 41.9981 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 688.2040 | SECTOR NO. | 1 | TAU | 41.7384 | TAUWDP | 41.7384 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 688.2040 | SECTOR NO. | 2 | TAU | 41.7384 | TAUWDP | 41.7384 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 688.2040 | SECTOR NO. | 3 | TAU | 41.7384 | TAUWDP | 41.7384 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 688.2040 | SECTOR NO. | 4 | TAU | 41.7384 | TAUWDP | 41.7384 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 703.2040 | SECTOR NO. | 1 | TAU | 41.6301 | TAUWDP | 41.6301 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 703.2040 | SECTOR NO. | 4 | TAU | 41.6301 | TAUWDP | 41.6301 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 703.2040 | SECTOR NO. | 5 | TAU | 41.6301 | TAUWDP | 41.6301 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 703.2040 | SECTOR NO. | 6 | TAU | 41.6301 | TAUWDP | 41.6301 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 703.2040 | SECTOR NO. | 7 | TAU | 41.6301 | TAUWDP | 41.6301 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 703.2040 | SECTOR NO. | 8 | TAU | 41.6301 | TAUWDP | 41.6301 | TIME | 112.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                                   | 718.2040 | SECTOR NO. | 6 | TAU | 41.5217 | TAUWDP | 41.5217 | TIME | 112.00 |
| *MANIF. TIME=112.50 IS=1 ZCALC( 24)= 323.92 ZCALC( 23)= 308.92 AINCW= 321.88 AINCHI= 308.92 DELZ=12.960 ALP=453.77 ALPHI=453.49  |          |            |   |     |         |        |         |      |        |
| *CANIER. TIME=112.50 IS=2 ZCALC( 24)= 323.92 ZCALC( 23)= 308.92 AINCW= 316.49 AINCHI= 308.92 DELZ= 6.568 ALP=453.78 ALPHI=453.65 |          |            |   |     |         |        |         |      |        |

|           |             |      |             |        |             |        |        |          |         |        |       |        |      |        |        |        |
|-----------|-------------|------|-------------|--------|-------------|--------|--------|----------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 24)= | 323.92 | ZCALC( 23)= | 308.92 | AINCW= | 316.68   | AINCHI= | 308.92 | DELZ= | 7.763  | ALP= | 453.76 | ALPHI= | 453.66 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 24)= | 323.92 | ZCALC( 23)= | 308.92 | AINCW= | 323.64   | AINCHI= | 308.92 | DELZ= | 14.722 | ALP= | 453.77 | ALPHI= | 453.44 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 25)= | 338.92 | ZCALC( 24)= | 323.92 | AINCW= | 331.91   | AINCHI= | 323.92 | DELZ= | 7.993  | ALP= | 453.76 | ALPHI= | 453.60 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 25)= | 338.92 | ZCALC( 24)= | 323.92 | AINCW= | 333.88   | AINCHI= | 323.92 | DELZ= | 10.441 | ALP= | 453.76 | ALPHI= | 453.54 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 25)= | 338.92 | ZCALC( 24)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.961  | ALP= | 453.76 | ALPHI= | 453.58 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 25)= | 338.92 | ZCALC( 24)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.09 | DELZ= | 7.968  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.09 | DELZ= | 7.968  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 34)= | 442.06 | ZCALC( 33)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.09 | DELZ= | 7.968  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 51)= | 688.20 | ZCALC( 50)= | 673.20 | AINCW= | 688.20   | AINCHI= | 673.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 51)= | 688.20 | ZCALC( 50)= | 673.20 | AINCW= | 688.20   | AINCHI= | 673.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 51)= | 688.20 | ZCALC( 50)= | 673.20 | AINCW= | 688.20   | AINCHI= | 673.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 51)= | 688.20 | ZCALC( 50)= | 673.20 | AINCW= | 688.20   | AINCHI= | 673.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 703.20   | AINCHI= | 688.20 | DELZ= | 6.434  | ALP= | 453.75 | ALPHI= | 453.56 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 691.71   | AINCHI= | 688.20 | DELZ= | 3.510  | ALP= | 453.75 | ALPHI= | 453.60 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 321.88   | AINCHI= | 308.92 | DELZ= | 12.960 | ALP= | 453.77 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 315.49   | AINCHI= | 308.92 | DELZ= | 5.568  | ALP= | 453.78 | ALPHI= | 453.65 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 316.68   | AINCHI= | 308.92 | DELZ= | 7.763  | ALP= | 453.78 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 323.64   | AINCHI= | 308.92 | DELZ= | 14.722 | ALP= | 453.77 | ALPHI= | 453.44 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 331.91   | AINCHI= | 323.92 | DELZ= | 7.993  | ALP= | 453.76 | ALPHI= | 453.60 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 52)= | 703.20 | ZCALC( 51)= | 688.20 | AINCW= | 334.36   | AINCHI= | 323.92 | DELZ= | 10.441 | ALP= | 453.76 | ALPHI= | 453.54 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 53)= | 338.92 | ZCALC( 52)= | 323.92 | AINCW= | 331.95   | AINCHI= | 323.92 | DELZ= | 7.134  | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 54)= | 442.06 | ZCALC( 53)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 55)= | 457.06 | ZCALC( 54)= | 442.06 | AINCW= | 457.06   | AINCHI= | 442.06 | DELZ= | 14.684 | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 56)= | 688.20 | ZCALC( 55)= | 688.20 | AINCW= | 688.20   | AINCHI= | 688.20 | DELZ= | 9.011  | ALP= | 453.76 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 703.20   | AINCHI= | 688.20 | DELZ= | 6.434  | ALP= | 453.75 | ALPHI= | 453.56 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 691.71   | AINCHI= | 688.20 | DELZ= | 3.510  | ALP= | 453.75 | ALPHI= | 453.60 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 321.88   | AINCHI= | 308.92 | DELZ= | 12.960 | ALP= | 453.77 | ALPHI= | 453.49 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 315.49   | AINCHI= | 308.92 | DELZ= | 5.568  | ALP= | 453.78 | ALPHI= | 453.65 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 316.68   | AINCHI= | 308.92 | DELZ= | 7.763  | ALP= | 453.78 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 323.64   | AINCHI= | 308.92 | DELZ= | 14.722 | ALP= | 453.77 | ALPHI= | 453.44 |
| *PARTIAL* | TIME=112.50 | IS=7 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 331.91   | AINCHI= | 323.92 | DELZ= | 7.993  | ALP= | 453.76 | ALPHI= | 453.60 |
| *PARTIAL* | TIME=112.50 | IS=8 | ZCALC( 57)= | 703.20 | ZCALC( 56)= | 688.20 | AINCW= | 334.36   | AINCHI= | 323.92 | DELZ= | 10.441 | ALP= | 453.76 | ALPHI= | 453.54 |
| *PARTIAL* | TIME=112.50 | IS=1 | ZCALC( 58)= | 442.06 | ZCALC( 57)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=2 | ZCALC( 58)= | 442.06 | ZCALC( 57)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=3 | ZCALC( 58)= | 442.06 | ZCALC( 57)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=4 | ZCALC( 58)= | 442.06 | ZCALC( 57)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=5 | ZCALC( 58)= | 442.06 | ZCALC( 57)= | 427.06 | AINCW= | 442.06   | AINCHI= | 441.35 | DELZ= | 7.13   | ALP= | 453.76 | ALPHI= | 453.62 |
| *PARTIAL* | TIME=112.50 | IS=6 | ZCALC( 58)= | 442.06 | ZCALC( 57)= | 427.06 | AINCW= | 442.06</ |         |        |       |        |      |        |        |        |

|        |             |           |            |   |          |            |   |        |        |         |         |        |         |        |      |        |
|--------|-------------|-----------|------------|---|----------|------------|---|--------|--------|---------|---------|--------|---------|--------|------|--------|
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 442.0610 | SECTOR NO. | 7 | TAU    | =      | 41.9981 | TAUWDP  | =      | 41.9981 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 442.0610 | SECTOR NO. | 8 | TAU    | =      | 41.9981 | TAUWDP  | =      | 41.9981 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 658.2040 | SECTOR NO. | 2 | TAU    | =      | 41.9552 | TAUWDP  | =      | 41.9552 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 658.2040 | SECTOR NO. | 3 | TAU    | =      | 41.9552 | TAUWDP  | =      | 41.9552 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 1 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 2 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 3 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 4 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 5 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 6 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 7 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 673.2040 | SECTOR NO. | 8 | TAU    | =      | 41.8468 | TAUWDP  | =      | 41.8468 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 688.2040 | SECTOR NO. | 5 | TAU    | =      | 41.7384 | TAUWDP  | =      | 41.7384 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 688.2040 | SECTOR NO. | 6 | TAU    | =      | 41.7384 | TAUWDP  | =      | 41.7384 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 688.2040 | SECTOR NO. | 7 | TAU    | =      | 41.7384 | TAUWDP  | =      | 41.7384 | TIME   | =    | 112.50 |
| ALB    | BURNOUT     | INCREMENT | LOCATION   | = | 688.2040 | SECTOR NO. | 8 | TAU    | =      | 41.7384 | TAUWDP  | =      | 41.7384 | TIME   | =    | 112.50 |
| PARIBN | TIME=113.00 | IS=2      | ZCALC( 22) | = | 293.92   | ZCALC( 21) | = | 278.92 | AINCW= | 294.01  | AINCHI= | 278.92 | DELZ=   | 15.089 | ALP= | 453.81 |
| PARIBN | TIME=113.00 | IS=3      | ZCALC( 22) | = | 293.92   | ZCALC( 21) | = | 278.92 | AINCW= | 295.21  | AINCHI= | 278.92 | DELZ=   | 16.286 | ALP= | 453.81 |
| PARIBN | TIME=113.00 | IS=1      | ZCALC( 23) | = | 308.92   | ZCALC( 22) | = | 293.92 | AINCW= | 309.40  | AINCHI= | 293.92 | DELZ=   | 6.481  | ALP= | 453.80 |
| PARIBN | TIME=113.00 | IS=4      | ZCALC( 23) | = | 308.92   | ZCALC( 22) | = | 293.92 | AINCW= | 302.17  | AINCHI= | 293.92 | DELZ=   | 8.247  | ALP= | 453.80 |
| PARIBN | TIME=113.00 | IS=8      | ZCALC( 23) | = | 308.92   | ZCALC( 22) | = | 293.92 | AINCW= | 309.59  | AINCHI= | 293.92 | DELZ=   | 15.674 | ALP= | 453.79 |
| PARIBN | TIME=113.00 | IS=5      | ZCALC( 24) | = | 323.92   | ZCALC( 23) | = | 308.92 | AINCW= | 310.45  | AINCHI= | 308.92 | DELZ=   | 1.531  | ALP= | 453.79 |
| PARIBN | TIME=113.00 | IS=6      | ZCALC( 24) | = | 323.92   | ZCALC( 23) | = | 308.92 | AINCW= | 312.91  | AINCHI= | 308.92 | DELZ=   | 3.989  | ALP= | 453.78 |
| PARIBN | TIME=113.00 | IS=7      | ZCALC( 24) | = | 323.92   | ZCALC( 23) | = | 308.92 | AINCW= | 312.43  | AINCHI= | 308.92 | DELZ=   | 3.507  | ALP= | 453.79 |
| PARIBN | TIME=113.00 | IS=1      | ZCALC( 35) | = | 457.06   | ZCALC( 34) | = | 442.06 | AINCW= | 457.06  | AINCHI= | 444.55 | DELZ=   | 12.511 | ALP= | 316.85 |
| PARIBN | TIME=113.00 | IS=2      | ZCALC( 35) | = | 457.06   | ZCALC( 34) | = | 442.06 | AINCW= | 457.06  | AINCHI= | 445.20 | DELZ=   | 11.864 | ALP= | 316.74 |
| PARIBN | TIME=113.00 | IS=3      | ZCALC( 35) | = | 457.06   | ZCALC( 34) | = | 442.06 | AINCW= | 457.06  | AINCHI= | 445.08 | DELZ=   | 11.986 | ALP= | 316.76 |
| PARIBN | TIME=113.00 | IS=4      | ZCALC( 35) | = |          |            |   |        |        |         |         |        |         |        |      |        |

|          |             |      |             |        |             |        |        |        |         |        |             |            |              |
|----------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------------|------------|--------------|
| •PARTBN• | TIME=113.00 | IS=2 | ZCALC( 49)= | 658.20 | ZCALC( 40)= | 643.20 | AINCW= | 653.23 | AINCHI= | 643.20 | DELZ=10.029 | ALP=453.84 | ALPHI=453.52 |
| •PARTBN• | TIME=113.00 | IS=3 | ZCALC( 49)= | 658.20 | ZCALC( 48)= | 643.20 | AINCW= | 654.18 | AINCHI= | 643.20 | DELZ=11.273 | ALP=453.84 | ALPHI=453.47 |
| •PARTBN• | TIME=113.00 | IS=1 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 659.88 | AINCHI= | 658.20 | DELZ=       | ALP=453.83 | ALPHI=453.83 |
| •PARTBN• | TIME=113.00 | IS=4 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 661.71 | AINCHI= | 659.20 | DELZ=       | ALP=453.82 | ALPHI=453.75 |
| •PARTBN• | TIME=113.00 | IS=5 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 670.32 | AINCHI= | 658.20 | DELZ=12.115 | ALP=453.80 | ALPHI=453.40 |
| •PARTBN• | TIME=113.00 | IS=6 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 672.86 | AINCHI= | 658.20 | DELZ=14.656 | ALP=453.80 | ALPHI=453.30 |
| •PARTBN• | TIME=113.00 | IS=7 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 672.36 | AINCHI= | 658.20 | DELZ=14.158 | ALP=453.80 | ALPHI=453.32 |
| •PARTBN• | TIME=113.00 | IS=8 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 669.42 | AINCHI= | 658.20 | DELZ=11.220 | ALP=453.81 | ALPHI=453.44 |
| •PARTBN• | TIME=113.00 | IS=2 | ZCALC( 21)= | 293.92 | ZCALC( 21)= | 278.92 | AINCW= | 294.01 | AINCHI= | 278.92 | DELZ=15.089 | ALP=453.81 | ALPHI=453.43 |
| •PARTBN• | TIME=113.00 | IS=3 | ZCALC( 22)= | 293.92 | ZCALC( 21)= | 278.92 | AINCW= | 295.21 | AINCHI= | 278.92 | DELZ=16.286 | ALP=453.81 | ALPHI=453.40 |
| •PARTBN• | TIME=113.00 | IS=1 | ZCALC( 22)= | 308.92 | ZCALC( 22)= | 293.92 | AINCW= | 300.40 | AINCHI= | 293.92 | DELZ=       | ALP=453.80 | ALPHI=453.66 |
| •PARTBN• | TIME=113.00 | IS=4 | ZCALC( 23)= | 308.92 | ZCALC( 22)= | 293.92 | AINCW= | 302.17 | AINCHI= | 293.92 | DELZ=       | ALP=453.80 | ALPHI=453.62 |
| •PARTBN• | TIME=113.00 | IS=5 | ZCALC( 23)= | 308.92 | ZCALC( 22)= | 293.92 | AINCW= | 309.59 | AINCHI= | 293.92 | DELZ=15.674 | ALP=453.79 | ALPHI=453.42 |
| •PARTBN• | TIME=113.00 | IS=6 | ZCALC( 23)= | 323.92 | ZCALC( 23)= | 308.92 | AINCW= | 310.45 | AINCHI= | 308.92 | DELZ=       | ALP=453.79 | ALPHI=453.77 |
| •PARTBN• | TIME=113.00 | IS=7 | ZCALC( 24)= | 323.92 | ZCALC( 23)= | 308.92 | AINCW= | 312.91 | AINCHI= | 308.92 | DELZ=       | ALP=453.78 | ALPHI=453.71 |
| •PARTBN• | TIME=113.00 | IS=8 | ZCALC( 24)= | 323.92 | ZCALC( 23)= | 308.92 | AINCW= | 312.43 | AINCHI= | 308.92 | DELZ=       | ALP=453.79 | ALPHI=453.73 |
| •PARTBN• | TIME=113.00 | IS=1 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 444.55 | DELZ=12.511 | ALP=316.85 | ALPHI=14.65  |
| •PARTBN• | TIME=113.00 | IS=2 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 445.20 | DELZ=11.864 | ALP=316.74 | ALPHI=1.63   |
| •PARTBN• | TIME=113.00 | IS=3 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 445.08 | DELZ=11.986 | ALP=316.76 | ALPHI=1.44   |
| •PARTBN• | TIME=113.00 | IS=4 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 444.37 | DELZ=12.690 | ALP=316.88 | ALPHI=19.13  |
| •PARTBN• | TIME=113.00 | IS=5 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 443.54 | DELZ=13.521 | ALP=317.02 | ALPHI=40.04  |
| •PARTBN• | TIME=113.00 | IS=6 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 443.29 | DELZ=13.773 | ALP=317.07 | ALPHI=46.29  |
| •PARTBN• | TIME=113.00 | IS=7 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 443.34 | DELZ=13.721 | ALP=317.06 | ALPHI=45.07  |
| •PARTBN• | TIME=113.00 | IS=8 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 443.63 | DELZ=13.434 | ALP=317.01 | ALPHI=37.85  |
| •PARTBN• | TIME=113.00 | IS=2 | ZCALC( 49)= | 658.20 | ZCALC( 48)= | 643.20 | AINCW= | 653.23 | AINCHI= | 643.20 | DELZ=10.029 | ALP=453.84 | ALPHI=453.52 |
| •PARTBN• | TIME=113.00 | IS=3 | ZCALC( 49)= | 658.20 | ZCALC( 48)= | 643.20 | AINCW= | 654.18 | AINCHI= | 643.20 | DELZ=11.273 | ALP=453.84 | ALPHI=453.47 |
| •PARTBN• | TIME=113.00 | IS=1 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 659.88 | AINCHI= | 658.20 | DELZ=       | ALP=453.83 | ALPHI=453.83 |
| •PARTBN• | TIME=113.00 | IS=4 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 661.71 | AINCHI= | 658.20 | DELZ=       | ALP=453.82 | ALPHI=453.75 |
| •PARTBN• | TIME=113.00 | IS=5 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 670.32 | AINCHI= | 658.20 | DELZ=12.115 | ALP=453.80 | ALPHI=453.40 |
| •PARTBN• | TIME=113.00 | IS=6 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 672.86 | AINCHI= | 658.20 | DELZ=14.656 | ALP=453.80 | ALPHI=453.30 |
| •PARTBN• | TIME=113.00 | IS=7 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 672.36 | AINCHI= | 658.20 | DELZ=14.158 | ALP=453.80 | ALPHI=453.32 |
| •PARTBN• | TIME=113.00 | IS=8 | ZCALC( 50)= | 673.20 | ZCALC( 49)= | 658.20 | AINCW= | 669.42 | AINCHI= | 658.20 | DELZ=11.220 | ALP=453.81 | ALPHI=453.44 |



IGNITION TIME, TIME (S)

113.00000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                                        |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 4987592.7     | 1121255.5    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 4994781.2     | 1122871.5    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 42726.478     | 9155.6764    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMDTI               | .12194960+10  | .27415362+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 255.12114     | 255.12114    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .12694877+10  | .28539220+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6286909     | 1.6286909    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 1974.5506     | 4353.1389    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 499861.14     | 1102005.2    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 21.857105     | 48.187771    |
| INERT MASS REMAINING (KG,LBM)                                   | MIK                  | 71.560890     | 157.76476    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 143.84098     | 222953.97    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 5.7230945     | 349244.65    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 6198.2009     | 13664.399    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 692.00755     | 1525.6155    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1594122     | 1.1594122    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.766692     | 28.145738    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1553.1572     | 5095.6600    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .99666501-01  | .99666501-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .19457820+09  | 282.21182    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .52720238+11  | 76475.844    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 1.5623691     | 2421.6769    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .70911012-02  | .27917721    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | 1.0750091     | 42.326342    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | .25337456     | 15463.085    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.850438     | 3347179.1    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3340.4289     | 6012.7719    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |              |
| RAIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABCYL                | 142.27861     | 220532.29    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 5.4677337     | 333661.58    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 281.64187     | 17186841.    |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .19156264+09  | 277.83812    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDY               | .50327433+11  | 72986.519    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | .70611449-02  | .27799783    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | .70548971-02  | .27775186    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.847463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3339.5793     | 6011.2427    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.290839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |              |
| INNOAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.6009102     | 2481.4159    |
| EXPANSION RATIO                                                 | EPR                  | 6.7147022     | 6.7140022    |
| PRESSURE RATIO                                                  | PEPU                 | .23538100-01  | .23538100-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AARST                | .37910250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLPS                | 3.0000000     | 3.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | H    | LP     | AP       | WDOT    | OWDOT  | DW/DT  | RU     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE                        |        |        |         |        |      |        |          |         |        |        |        |        |        |       |
| 15.000                      | 282.21 | 282.21 | 6012.77 | 7.50   | .002 | 446.28 | 15845.96 | 101.61  | 42.82  | -58.80 | .2786  | 42.326 | .0000  | .000  |
| 30.000                      | 282.21 | 282.21 | 6012.76 | 16.53  | .005 | 446.54 | 15865.31 | 224.05  | 118.39 | -4.04  | .2787  | 42.279 | .0000  | .000  |
| 45.000                      | 282.21 | 282.20 | 6012.75 | 25.53  | .007 | 446.81 | 15884.67 | 346.57  | 118.48 | -4.05  | .2787  | 42.275 | .0000  | .000  |
| 60.000                      | 282.20 | 282.19 | 6012.73 | 34.52  | .010 | 447.07 | 15904.02 | 469.19  | 118.56 | -4.05  | .2787  | 42.270 | .0000  | .000  |
| 75.000                      | 282.20 | 282.17 | 6012.70 | 43.50  | .012 | 447.34 | 15923.28 | 591.89  | 118.64 | -4.06  | .2788  | 42.266 | .0000  | .000  |
| 90.000                      | 282.19 | 282.15 | 6012.67 | 52.47  | .015 | 447.60 | 15942.52 | 714.68  | 118.73 | -4.06  | .2788  | 42.261 | .0000  | .000  |
| 105.000                     | 282.18 | 282.13 | 6012.63 | 61.42  | .017 | 447.87 | 15961.71 | 837.56  | 118.81 | -4.07  | .2788  | 42.256 | .0000  | .000  |
| 120.000                     | 282.16 | 282.10 | 6012.58 | 70.36  | .020 | 448.13 | 15980.87 | 960.52  | 118.89 | -4.07  | .2788  | 42.251 | .0000  | .000  |
| 135.761                     | 282.15 | 282.07 | 6012.54 | 77.36  | .022 | 448.34 | 15995.85 | 1083.00 | 93.27  | -3.20  | .2789  | 42.246 | .0000  | .000  |
| 150.771                     | 282.15 | 282.03 | 6012.43 | 93.38  | .027 | 366.25 | 13254.04 | 1057.00 | .00    | .00    | .2788  | 42.246 | .0000  | .000  |
| 165.771                     | 282.13 | 282.03 | 6012.50 | 84.29  | .024 | 83.33  | 14734.46 | 1050.73 | .00    | -3.73  | .2788  | 42.246 | .0000  | .000  |
| 180.771                     | 282.10 | 282.01 | 6012.51 | 82.37  | .023 | 447.44 | 15935.10 | 1120.97 | 57.03  | -3.21  | .2788  | 42.239 | .0000  | .000  |
| 195.771                     | 282.09 | 281.97 | 6012.45 | 91.18  | .026 | 448.25 | 15976.24 | 1243.89 | 118.85 | -4.07  | .2789  | 42.233 | .0000  | .000  |
| 210.771                     | 282.07 | 281.93 | 6012.39 | 99.97  | .026 | 449.01 | 16017.17 | 1367.07 | 119.08 | -4.09  | .2789  | 42.227 | .0000  | .000  |
| 225.771                     | 282.04 | 281.89 | 6012.31 | 108.73 | .031 | 449.74 | 16057.88 | 1490.49 | 119.31 | -4.11  | .2790  | 42.222 | .0000  | .000  |
| 240.771                     | 282.02 | 281.84 | 6012.24 | 117.48 | .033 | 450.41 | 16098.38 | 1614.15 | 119.52 | -4.13  | .2791  | 42.216 | .0000  | .000  |
| 255.771                     | 281.99 | 281.78 | 6012.15 | 126.20 | .036 | 451.04 | 16138.66 | 1738.03 | 119.72 | -4.15  | .2791  | 42.210 | .0000  | .000  |
| 270.771                     | 281.96 | 281.72 | 6012.07 | 134.90 | .038 | 451.63 | 16170.74 | 1862.11 | 119.92 | -4.17  | .2792  | 42.204 | .0000  | .000  |
| 285.771                     | 281.93 | 281.66 | 6011.97 | 143.58 | .041 | 452.18 | 16202.85 | 1986.40 | 120.10 | -4.19  | .2793  | 42.198 | .0000  | .000  |
| 300.771                     | 281.90 | 281.59 | 6011.87 | 152.24 | .043 | 452.68 | 16234.95 | 2110.89 | 120.28 | -4.21  | .2794  | 42.192 | .0000  | .000  |
| 315.771                     | 281.87 | 281.52 | 6011.77 | 160.86 | .046 | 453.14 | 16267.08 | 2235.56 | 120.44 | -4.23  | .2795  | 42.185 | .0000  | .000  |
| 330.771                     | 281.83 | 281.45 | 6011.66 | 169.57 | .048 | 453.55 | 16307.34 | 2361.45 | 121.99 | -3.90  | .2795  | 42.179 | .0000  | .000  |
| 345.771                     | 281.81 | 281.40 | 6011.58 | 174.90 | .050 | 453.93 | 16351.30 | 2488.13 | 75.59  | -4.09  | .2796  | 42.135 | .0000  | .000  |
| 360.771                     | 281.80 | 281.39 | 6011.57 | 175.58 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 375.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 390.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 405.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 420.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 435.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 450.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 465.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 480.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 495.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 510.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 525.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 540.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 555.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 570.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 585.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 600.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 615.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 630.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 645.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 660.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 675.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 690.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 705.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 720.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 735.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 750.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 765.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 780.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 795.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 810.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 825.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 840.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 855.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 870.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 885.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 900.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 915.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 930.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 945.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 960.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 975.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 990.771                     | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1005.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1020.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1035.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1050.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1065.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1080.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1095.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0000  | .000  |
| 1110.771                    | 281.80 | 281.39 | 6011.58 | 174.96 | .050 | 170.17 | 16402.64 | 2454.45 | 9.04   | -4.29  | .2796  | 42.035 | .0     |       |



|          |        |        |         |        |      |        |          |         |        |       |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|-------|-------|--------|-------|------|
| 628.204  | 201.06 | 279.98 | 6009.60 | 285.84 | .081 | 452.49 | 16182.64 | 3923.69 | 120.01 | -4.20 | .2789 | 41.937 | .0000 | .000 |
| 643.204  | 280.99 | 279.84 | 6009.40 | 294.49 | .084 | 453.67 | 16212.66 | 4048.10 | 120.19 | -4.21 | .2789 | 41.927 | .0000 | .000 |
| 658.204  | 280.72 | 279.72 | 6009.21 | 302.52 | .086 | 453.59 | 16247.55 | 4163.89 | 111.57 | -4.23 | .2790 | 41.909 | .0000 | .000 |
| 673.204  | 280.89 | 279.65 | 6009.12 | 306.62 | .087 | 340.36 | 16263.84 | 4225.44 | 57.30  | -4.24 | .2790 | 41.847 | .0000 | .000 |
| 688.204  | 280.89 | 279.65 | 6009.13 | 306.72 | .087 | .00    | 16301.71 | 4229.68 | .00    | -4.24 | .2789 | 41.738 | .0000 | .000 |
| 703.204  | 280.89 | 279.65 | 6009.13 | 306.72 | .087 | .00    | 16331.06 | 4233.72 | .00    | -4.23 | .2789 | 41.630 | .0000 | .000 |
| 718.204  | 280.88 | 279.65 | 6009.14 | 305.73 | .087 | .00    | 16360.25 | 4238.17 | .00    | -4.25 | .2789 | 41.522 | .0000 | .000 |
| 726.191  | 280.68 | 279.65 | 6009.14 | 305.61 | .087 | .00    | 16375.73 | 4240.44 | .00    | -4.28 | .2789 | 41.464 | .0000 | .000 |
| 741.191  | 280.88 | 279.65 | 6009.14 | 305.79 | .087 | .00    | 16302.80 | 4244.72 | .00    | -4.28 | .2789 | 41.140 | .0000 | .000 |
| 746.336  | 280.88 | 279.65 | 6009.14 | 305.85 | .087 | .00    | 16365.20 | 4246.19 | .00    | -1.47 | .2789 | 41.240 | .0000 | .000 |
| 746.346  | 280.86 | 279.24 | 6008.01 | 349.68 | .100 | .00    | 14349.59 | 4246.19 | .00    | .00   | .2784 | 41.029 | .0000 | .000 |
| 761.346  | 280.73 | 279.24 | 6008.40 | 335.46 | .096 | .00    | 14972.15 | 4250.02 | .00    | -3.82 | .2788 | 41.104 | .0000 | .000 |
| 776.346  | 280.61 | 279.24 | 6008.73 | 322.34 | .092 | .00    | 15597.93 | 4254.01 | .00    | -3.99 | .2788 | 41.178 | .0000 | .000 |
| 791.346  | 280.51 | 279.24 | 6009.03 | 310.20 | .088 | .00    | 16224.19 | 4258.16 | .00    | -4.15 | .2788 | 41.253 | .0000 | .000 |
| 794.831  | 280.49 | 279.24 | 6009.10 | 307.50 | .088 | .00    | 16370.23 | 4259.14 | .00    | .00   | .2788 | 41.270 | .0000 | .000 |
| 809.831  | 280.49 | 279.24 | 6009.09 | 307.94 | .088 | .00    | 16363.57 | 4263.41 | .00    | -4.27 | .2788 | 41.093 | .0000 | .000 |
| 834.831  | 280.50 | 279.24 | 6009.07 | 308.37 | .088 | .00    | 16356.92 | 4267.68 | .00    | -4.27 | .2788 | 40.916 | .0000 | .000 |
| 839.831  | 280.50 | 279.24 | 6009.06 | 308.80 | .088 | .00    | 16350.28 | 4271.95 | .00    | -4.27 | .2788 | 40.739 | .0000 | .000 |
| 854.781  | 280.50 | 279.24 | 6009.05 | 309.23 | .088 | .00    | 16343.67 | 4276.20 | .00    | -4.25 | .2788 | 40.563 | .0000 | .000 |
| 869.781  | 280.51 | 279.24 | 6009.03 | 310.07 | .088 | .00    | 16315.82 | 4280.46 | .00    | -4.26 | .2788 | 39.794 | .0000 | .000 |
| 884.781  | 280.52 | 279.24 | 6009.01 | 310.91 | .089 | .00    | 16287.96 | 4284.71 | .00    | -4.25 | .2788 | 39.025 | .0000 | .000 |
| 899.781  | 280.52 | 279.24 | 6008.99 | 311.75 | .089 | .00    | 16260.09 | 4288.95 | .00    | -4.25 | .2788 | 38.255 | .0000 | .000 |
| 914.781  | 280.53 | 279.24 | 6008.97 | 312.59 | .089 | .00    | 16232.22 | 4293.19 | .00    | -4.24 | .2788 | 37.486 | .0000 | .000 |
| 929.781  | 280.54 | 279.24 | 6008.95 | 313.44 | .089 | .00    | 16204.33 | 4297.42 | .00    | -4.23 | .2788 | 36.717 | .0000 | .000 |
| 944.781  | 280.55 | 279.24 | 6008.93 | 314.28 | .090 | .00    | 16176.44 | 4301.65 | .00    | -4.22 | .2788 | 35.948 | .0000 | .000 |
| 959.781  | 280.55 | 279.24 | 6008.91 | 315.13 | .090 | .00    | 16148.55 | 4305.86 | .00    | -4.22 | .2788 | 35.178 | .0000 | .000 |
| 974.781  | 280.56 | 279.24 | 6008.89 | 315.99 | .090 | .00    | 16120.65 | 4310.07 | .00    | -4.21 | .2788 | 34.409 | .0000 | .000 |
| 989.781  | 280.56 | 279.24 | 6008.87 | 316.84 | .090 | .00    | 16092.74 | 4314.27 | .00    | -4.20 | .2788 | 33.640 | .0000 | .000 |
| 1004.781 | 280.57 | 279.24 | 6008.85 | 317.70 | .091 | .00    | 16064.82 | 4318.47 | .00    | -4.19 | .2788 | 32.871 | .0000 | .000 |
| 1019.781 | 280.58 | 279.24 | 6008.83 | 318.56 | .091 | .00    | 16036.89 | 4322.66 | .00    | -4.19 | .2788 | 32.101 | .0000 | .000 |
| 1034.781 | 280.59 | 279.24 | 6008.80 | 319.43 | .091 | .00    | 16008.96 | 4326.84 | .00    | -4.18 | .2788 | 31.332 | .0000 | .000 |
| 1049.781 | 280.59 | 279.24 | 6008.80 | 319.77 | .091 | .00    | 15997.77 | 4328.51 | .00    | -1.67 | .2788 | 31.024 | .0000 | .000 |
| 1064.781 | 280.60 | 279.24 | 6008.77 | 320.64 | .091 | .00    | 15986.84 | 4332.68 | .00    | -4.17 | .2788 | 30.483 | .0000 | .000 |
| 1079.781 | 280.61 | 279.24 | 6008.75 | 321.51 | .092 | .00    | 15971.80 | 4336.84 | .00    | -4.16 | .2788 | 29.942 | .0000 | .000 |
| 1094.781 | 280.61 | 279.24 | 6008.73 | 322.29 | .092 | .00    | 15961.69 | 4340.55 | .00    | -3.71 | .2788 | 29.459 | .0000 | .000 |
| 1109.781 | 280.61 | 280.10 | 5973.06 | 997.06 | .285 | .0000  | 15823.73 | 4353.14 | .00    | -7.65 | .2760 | 29.460 | .0000 | .000 |
| 1124.781 | 277.84 | 277.84 | 6011.24 | -56    | .000 | .0000  | 12413.12 | 4.94    | .00    | -4.94 | .2776 | 20.670 | .0000 | .000 |

|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | #SLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+02                            | 2.8215+02  | 2.8207+02 | 6.0125+03   | 7.5178+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.0570+03       |
| AFT     | 1.1677+02                            | 2.8211+02  | 2.8203+02 | 6.0124+03   | 7.5188+01   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.0570+03       |

GAS BUILDUP IN SLOT, DW/Dt = -2.8948-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 2.8181+02 | 2.8139+02 | 6.0115+03 | 1.7792+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2.4842+03 |
| AT 7    | 4.2706+02 | 2.8185+02 | 2.8123+02 | 6.0111+03 | 1.7801+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2.4842+03 |

GAS BUILDUP IN SLOT, DR/DI = -2.8741-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 2.8088+02 | 2.7965+02 | 6.0091+03 | 3.3589+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.2482+03 |
| AFT     | 7.4635+02 | 2.8048+02 | 2.7924+02 | 6.0080+03 | 3.0628+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.2462+03 |

GAS BUILDUP IN SLOT,  $DN/DI = -2.6530-03$

|          |         |           |          |      |          |            |   |        |        |         |        |        |         |        |         |        |       |        |      |        |        |        |
|----------|---------|-----------|----------|------|----------|------------|---|--------|--------|---------|--------|--------|---------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 278.9190 | SECTOR NO. | 2 | TAU    | =      | 42.3598 | TAUWDP | =      | 42.3598 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 278.9190 | SECTOR NO. | 3 | TAU    | =      | 42.3598 | TAUWDP | =      | 42.3598 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 1 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 2 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 3 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 4 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 5 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 6 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 7 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 293.9190 | SECTOR NO. | 8 | TAU    | =      | 42.2515 | TAUWDP | =      | 42.2515 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 308.9190 | SECTOR NO. | 5 | TAU    | =      | 42.1433 | TAUWDP | =      | 42.1433 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 308.9190 | SECTOR NO. | 6 | TAU    | =      | 42.1433 | TAUWDP | =      | 42.1433 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 308.9190 | SECTOR NO. | 7 | TAU    | =      | 42.1433 | TAUWDP | =      | 42.1433 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 308.9190 | SECTOR NO. | 8 | TAU    | =      | 42.1433 | TAUWDP | =      | 42.1433 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 643.2040 | SECTOR NO. | 1 | TAU    | =      | 42.0636 | TAUWDP | =      | 42.0636 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 643.2040 | SECTOR NO. | 2 | TAU    | =      | 42.0636 | TAUWDP | =      | 42.0636 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 643.2040 | SECTOR NO. | 3 | TAU    | =      | 42.0636 | TAUWDP | =      | 42.0636 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 643.2040 | SECTOR NO. | 4 | TAU    | =      | 42.0636 | TAUWDP | =      | 42.0636 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 658.2040 | SECTOR NO. | 1 | TAU    | =      | 41.9552 | TAUWDP | =      | 41.9552 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 658.2040 | SECTOR NO. | 4 | TAU    | =      | 41.9552 | TAUWDP | =      | 41.9552 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 658.2040 | SECTOR NO. | 5 | TAU    | =      | 41.9552 | TAUWDP | =      | 41.9552 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 658.2040 | SECTOR NO. | 6 | TAU    | =      | 41.9552 | TAUWDP | =      | 41.9552 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 658.2040 | SECTOR NO. | 7 | TAU    | =      | 41.9552 | TAUWDP | =      | 41.9552 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| WEB      | BURNOUT | INCREMENT | LOCATION | =    | 658.2040 | SECTOR NO. | 8 | TAU    | =      | 41.9552 | TAUWDP | =      | 41.9552 | TIME   | =       | 113.00 |       |        |      |        |        |        |
| -----    |         |           |          |      |          |            |   |        |        |         |        |        |         |        |         |        |       |        |      |        |        |        |
| *PARTBN* | TIME    | =         | 113.50   | IS=1 | ZCALC(   | 21)        | = | 278.92 | ZCALC( | 20)     | =      | 263.92 | AINCW=  | 274.82 | AINCHI= | 263.92 | DELZ= | 15.897 | ALP= | 453.83 | ALPHI= | 453.41 |
| *PARTBN* | TIME    | =         | 113.50   | IS=2 | ZCALC(   | 21)        | = | 278.92 | ZCALC( | 20)     | =      | 263.92 | AINCW=  | 273.41 | AINCHI= | 263.92 | DELZ= | 9.491  | ALP= | 453.84 | ALPHI= | 453.60 |
| *PARTBN* | TIME    | =         | 113.50   | IS=3 | ZCALC(   | 21)        | = | 278.92 | ZCALC( | 20)     | =      | 263.92 | AINCW=  | 274.61 | AINCHI= | 263.92 | DELZ= | 10.687 | ALP= | 453.83 | ALPHI= | 453.56 |
| *PARTBN* | TIME    | =         | 113.50   | IS=4 | ZCALC(   | 22)        | = | 293.92 | ZCALC( | 21)     | =      | 278.92 | AINCW=  | 281.58 | AINCHI= | 278.92 | DELZ= | 2.659  | ALP= | 453.82 | ALPHI= | 453.78 |
| *PARTBN* | TIME    | =         | 113.50   | IS=5 | ZCALC(   | 22)        | = | 293.92 | ZCALC( | 21)     | =      | 278.92 | AINCW=  | 280.88 | AINCHI= | 278.92 | DELZ= | 10.960 | ALP= | 453.81 | ALPHI= | 453.55 |
| *PARTBN* | TIME    | =         | 113.50   | IS=6 | ZCALC(   | 22)        | = | 293.92 | ZCALC( | 21)     | =      | 278.92 | AINCW=  | 282.34 | AINCHI= | 278.92 | DELZ= | 13.425 | ALP= | 453.81 | ALPHI= | 453.48 |
| *PARTBN* | TIME    | =         | 113.50   | IS=7 | ZCALC(   | 22)        | = | 293.92 | ZCALC( | 21)     | =      | 278.92 | AINCW=  | 291.46 | AINCHI= | 278.92 | DELZ= | 12.942 | ALP= | 453.81 | ALPHI= | 453.50 |

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|                                  |             |             |                    |                    |               |                |             |            |              |
|----------------------------------|-------------|-------------|--------------------|--------------------|---------------|----------------|-------------|------------|--------------|
| *PARTBN                          | TIME=113.50 | IS=8        | ZCALC( 22)= 293.92 | ZCALC( 21)= 278.92 | AINCW= 289.02 | AINCHI= 278.92 | DELZ=10.132 | ALP=453.82 | ALPHI=453.58 |
| *PARTBN                          | TIME=113.50 | IS=1        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 446.64 | DELZ=10.424 | ALP=316.47 | ALPHI= 37.83 |
| *PARTBN                          | TIME=113.50 | IS=2        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 447.29 | DELZ= 9.775 | ALP=316.36 | ALPHI= 54.14 |
| *PARTBN                          | TIME=113.50 | IS=3        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 447.16 | DELZ= 9.897 | ALP=316.38 | ALPHI= 51.06 |
| *PARTBN                          | TIME=113.50 | IS=4        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 446.46 | DELZ=10.603 | ALP=316.50 | ALPHI= 33.33 |
| *PARTBN                          | TIME=113.50 | IS=5        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.63 | DELZ=11.436 | ALP=316.64 | ALPHI= 12.38 |
| *PARTBN                          | TIME=113.50 | IS=6        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.38 | DELZ=11.686 | ALP=316.69 | ALPHI= 6.10  |
| *PARTBN                          | TIME=113.50 | IS=7        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.42 | DELZ=11.637 | ALP=316.68 | ALPHI= 7.32  |
| *PARTBN                          | TIME=113.50 | IS=8        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.71 | DELZ=11.349 | ALP=316.63 | ALPHI= 14.56 |
| *PARTBN                          | TIME=113.50 | IS=1        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 638.44 | AINCHI= 628.20 | DELZ=10.235 | ALP=453.88 | ALPHI=453.55 |
| *PARTBN                          | TIME=113.50 | IS=2        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 631.78 | AINCHI= 628.20 | DELZ= 3.576 | ALP=453.90 | ALPHI=453.82 |
| *PARTBN                          | TIME=113.50 | IS=3        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 633.02 | AINCHI= 628.20 | DELZ= 4.819 | ALP=453.89 | ALPHI=453.77 |
| *PARTBN                          | TIME=113.50 | IS=4        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 640.28 | AINCHI= 628.20 | DELZ=12.072 | ALP=453.88 | ALPHI=453.47 |
| *PARTBN                          | TIME=113.50 | IS=5        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 648.90 | AINCHI= 643.20 | DELZ= 5.693 | ALP=453.86 | ALPHI=453.70 |
| *PARTBN                          | TIME=113.50 | IS=6        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 651.45 | AINCHI= 643.20 | DELZ= 8.246 | ALP=453.85 | ALPHI=453.60 |
| *PARTBN                          | TIME=113.50 | IS=7        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 650.95 | AINCHI= 643.20 | DELZ= 7.745 | ALP=453.85 | ALPHI=453.62 |
| *PARTBN                          | TIME=113.50 | IS=8        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 648.00 | AINCHI= 643.20 | DELZ= 4.798 | ALP=453.86 | ALPHI=453.74 |
| *PARTBN                          | TIME=113.50 | IS=1        | ZCALC( 21)= 278.92 | ZCALC( 20)= 263.92 | AINCW= 279.82 | AINCHI= 263.92 | DELZ=15.897 | ALP=453.83 | ALPHI=453.41 |
| *PARTBN                          | TIME=113.50 | IS=2        | ZCALC( 21)= 278.92 | ZCALC( 20)= 263.92 | AINCW= 273.41 | AINCHI= 263.92 | DELZ= 9.491 | ALP=453.84 | ALPHI=453.60 |
| *PARTBN                          | TIME=113.50 | IS=3        | ZCALC( 21)= 278.92 | ZCALC( 20)= 263.92 | AINCW= 274.61 | AINCHI= 263.92 | DELZ=10.687 | ALP=453.83 | ALPHI=453.56 |
| *PARTBN                          | TIME=113.50 | IS=4        | ZCALC( 22)= 293.92 | ZCALC( 21)= 278.92 | AINCW= 281.58 | AINCHI= 278.92 | DELZ= 2.659 | ALP=453.82 | ALPHI=453.79 |
| *PARTBN                          | TIME=113.50 | IS=5        | ZCALC( 22)= 293.92 | ZCALC( 21)= 278.92 | AINCW= 289.88 | AINCHI= 278.92 | DELZ=10.960 | ALP=453.81 | ALPHI=453.55 |
| *PARTBN                          | TIME=113.50 | IS=6        | ZCALC( 22)= 293.92 | ZCALC( 21)= 278.92 | AINCW= 292.34 | AINCHI= 278.92 | DELZ=13.425 | ALP=453.81 | ALPHI=453.48 |
| *PARTBN                          | TIME=113.50 | IS=7        | ZCALC( 22)= 293.92 | ZCALC( 21)= 278.92 | AINCW= 291.86 | AINCHI= 278.92 | DELZ=12.942 | ALP=453.81 | ALPHI=453.50 |
| *PARTBN                          | TIME=113.50 | IS=8        | ZCALC( 22)= 293.92 | ZCALC( 21)= 278.92 | AINCW= 289.02 | AINCHI= 278.92 | DELZ=10.132 | ALP=453.82 | ALPHI=453.58 |
| *PARTBN                          | TIME=113.50 | IS=1        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 446.64 | DELZ=10.424 | ALP=316.47 | ALPHI= 37.83 |
| *PARTBN                          | TIME=113.50 | IS=2        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 447.29 | DELZ= 9.775 | ALP=316.36 | ALPHI= 54.14 |
| *PARTBN                          | TIME=113.50 | IS=3        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 447.16 | DELZ= 9.897 | ALP=316.38 | ALPHI= 51.06 |
| *PARTBN                          | TIME=113.50 | IS=4        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 446.46 | DELZ=10.603 | ALP=316.50 | ALPHI= 33.33 |
| *PARTBN                          | TIME=113.50 | IS=5        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.63 | DELZ=11.436 | ALP=316.64 | ALPHI= 12.38 |
| *PARTBN                          | TIME=113.50 | IS=6        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.38 | DELZ=11.686 | ALP=316.69 | ALPHI= 6.10  |
| *PARTBN                          | TIME=113.50 | IS=7        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.42 | DELZ=11.637 | ALP=316.68 | ALPHI= 7.32  |
| *PARTBN                          | TIME=113.50 | IS=8        | ZCALC( 35)= 457.06 | ZCALC( 34)= 442.06 | AINCW= 457.06 | AINCHI= 445.71 | DELZ=11.349 | ALP=316.63 | ALPHI= 14.56 |
| *PARTBN                          | TIME=113.50 | IS=1        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 638.44 | AINCHI= 628.20 | DELZ=10.235 | ALP=453.88 | ALPHI=453.55 |
| *PARTBN                          | TIME=113.50 | IS=2        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 631.78 | AINCHI= 628.20 | DELZ= 3.576 | ALP=453.90 | ALPHI=453.82 |
| *PARTBN                          | TIME=113.50 | IS=3        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 633.02 | AINCHI= 628.20 | DELZ= 4.819 | ALP=453.89 | ALPHI=453.77 |
| *PARTBN                          | TIME=113.50 | IS=4        | ZCALC( 48)= 643.20 | ZCALC( 47)= 628.20 | AINCW= 640.28 | AINCHI= 628.20 | DELZ=12.072 | ALP=453.88 | ALPHI=453.47 |
| *PARTBN                          | TIME=113.50 | IS=5        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 648.90 | AINCHI= 643.20 | DELZ= 5.693 | ALP=453.86 | ALPHI=453.70 |
| *PARTBN                          | TIME=113.50 | IS=6        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 651.45 | AINCHI= 643.20 | DELZ= 8.246 | ALP=453.85 | ALPHI=453.60 |
| *PARTBN                          | TIME=113.50 | IS=7        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 650.95 | AINCHI= 643.20 | DELZ= 7.745 | ALP=453.85 | ALPHI=453.62 |
| *PARTBN                          | TIME=113.50 | IS=8        | ZCALC( 49)= 658.20 | ZCALC( 48)= 643.20 | AINCW= 648.00 | AINCHI= 643.20 | DELZ= 4.798 | ALP=453.86 | ALPHI=453.74 |
| NEB BURNOUT INCREMENT LOCATION = | 263.9190    | SECTION NO. | 1                  | TAU =              | 42.4680       | TAUWDP =       | 42.4680     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 263.9190    | SECTION NO. | 2                  | TAU =              | 42.4680       | TAUWDP =       | 42.4680     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 263.9190    | SECTION NO. | 3                  | TAU =              | 42.4680       | TAUWDP =       | 42.4680     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 263.9190    | SECTION NO. | 4                  | TAU =              | 42.4680       | TAUWDP =       | 42.4680     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 278.9190    | SECTION NO. | 1                  | TAU =              | 42.3598       | TAUWDP =       | 42.3598     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 278.9190    | SECTION NO. | 4                  | TAU =              | 42.3598       | TAUWDP =       | 42.3598     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 278.9190    | SECTION NO. | 5                  | TAU =              | 42.3598       | TAUWDP =       | 42.3598     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 278.9190    | SECTION NO. | 6                  | TAU =              | 42.3598       | TAUWDP =       | 42.3598     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 278.9190    | SECTION NO. | 7                  | TAU =              | 42.3598       | TAUWDP =       | 42.3598     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 278.9190    | SECTION NO. | 8                  | TAU =              | 42.3598       | TAUWDP =       | 42.3598     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 613.2640    | SECTION NO. | 2                  | TAU =              | 42.2803       | TAUWDP =       | 42.2803     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 613.2640    | SECTION NO. | 3                  | TAU =              | 42.2803       | TAUWDP =       | 42.2803     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 628.2640    | SECTION NO. | 1                  | TAU =              | 42.1719       | TAUWDP =       | 42.1719     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 628.2640    | SECTION NO. | 2                  | TAU =              | 42.1719       | TAUWDP =       | 42.1719     | TIME =     | 113.50       |
| NEB BURNOUT INCREMENT LOCATION = | 628.2640    | SECTION NO. | 3                  | TAU =              | 42.1719       | TAUWDP =       | 42.1719     | TIME =     | 113.50       |



|         |             |      |             |        |             |        |        |        |         |        |       |        |            |              |
|---------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------------|--------------|
| *PARTBN | TIME=114.00 | IS=3 | ZCALC( 20)= | 263.92 | ZCALC( 19)= | 248.92 | AINCW= | 254.92 | AINCHI= | 248.92 | DELZ= | 5.998  | ALP=453.86 | ALPHI=453.72 |
| *PARTBN | TIME=114.00 | IS=4 | ZCALC( 20)= | 263.92 | ZCALC( 19)= | 248.92 | AINCW= | 261.91 | AINCHI= | 248.92 | DELZ= | 12.991 | ALP=453.85 | ALPHI=453.50 |
| *PARTBN | TIME=114.00 | IS=5 | ZCALC( 21)= | 278.92 | ZCALC( 20)= | 263.92 | AINCW= | 270.22 | AINCHI= | 263.92 | DELZ= | 6.296  | ALP=453.84 | ALPHI=453.70 |
| *PARTBN | TIME=114.00 | IS=6 | ZCALC( 21)= | 278.92 | ZCALC( 20)= | 263.92 | AINCW= | 272.89 | AINCHI= | 263.92 | DELZ= | 8.770  | ALP=453.84 | ALPHI=453.82 |
| *PARTBN | TIME=114.00 | IS=7 | ZCALC( 21)= | 278.92 | ZCALC( 20)= | 263.92 | AINCW= | 272.20 | AINCHI= | 263.92 | DELZ= | 8.285  | ALP=453.84 | ALPHI=453.84 |
| *PARTBN | TIME=114.00 | IS=8 | ZCALC( 21)= | 278.92 | ZCALC( 20)= | 263.92 | AINCW= | 269.36 | AINCHI= | 263.92 | DELZ= | 5.439  | ALP=453.84 | ALPHI=453.72 |
| *PARTBN | TIME=114.00 | IS=1 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 448.64 | DELZ= | 8.424  | ALP=316.11 | ALPHI= 88.09 |
| *PARTBN | TIME=114.00 | IS=2 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 449.29 | DELZ= | 7.774  | ALP=315.99 | ALPHI=104.44 |
| *PARTBN | TIME=114.00 | IS=3 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 449.16 | DELZ= | 7.897  | ALP=316.01 | ALPHI=101.35 |
| *PARTBN | TIME=114.00 | IS=4 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 448.46 | DELZ= | 8.604  | ALP=316.14 | ALPHI= 83.57 |
| *PARTBN | TIME=114.00 | IS=5 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 447.62 | DELZ= | 9.440  | ALP=316.28 | ALPHI= 62.56 |
| *PARTBN | TIME=114.00 | IS=6 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 447.37 | DELZ= | 9.691  | ALP=316.33 | ALPHI= 56.26 |
| *PARTBN | TIME=114.00 | IS=7 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 447.42 | DELZ= | 9.642  | ALP=316.32 | ALPHI= 57.48 |
| *PARTBN | TIME=114.00 | IS=8 | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW= | 457.06 | AINCHI= | 447.71 | DELZ= | 9.353  | ALP=316.27 | ALPHI= 64.74 |
| *PARTBN | TIME=114.00 | IS=2 | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW= | 611.28 | AINCHI= | 598.20 | DELZ= | 13.073 | ALP=453.95 | ALPHI=453.50 |
| *PARTBN | TIME=114.00 | IS=3 | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW= | 612.52 | AINCHI= | 598.20 | DELZ= | 14.318 | ALP=453.94 | ALPHI=453.45 |
| *PARTBN | TIME=114.00 | IS=1 | ZCALC( 47)= | 628.20 | ZCALC( 46)= | 613.20 | AINCW= | 617.94 | AINCHI= | 613.20 | DELZ= | 4.735  | ALP=453.93 | ALPHI=453.81 |
| *PARTBN | TIME=114.00 | IS=4 | ZCALC( 47)= | 628.20 | ZCALC( 46)= | 613.20 | AINCW= | 619.78 | AINCHI= | 613.20 | DELZ= | 6.576  | ALP=453.92 | ALPHI=453.73 |
| *PARTBN | TIME=114.00 | IS=5 | ZCALC( 47)= | 628.20 | ZCALC( 46)= | 613.20 | AINCW= | 628.42 | AINCHI= | 613.20 | DELZ= | 15.211 | ALP=453.90 | ALPHI=453.38 |
| *PARTBN | TIME=114.00 | IS=6 | ZCALC( 47)= | 628.20 | ZCALC( 46)= | 613.20 | AINCW= | 627.52 | AINCHI= | 613.20 | DELZ= | 14.318 | ALP=453.91 | ALPHI=453.42 |
| *PARTBN | TIME=114.00 | IS=6 | ZCALC( 48)= | 643.20 | ZCALC( 47)= | 628.20 | AINCW= | 630.98 | AINCHI= | 628.20 | DELZ= | 2.774  | ALP=453.90 | ALPHI=453.85 |
| *PARTBN | TIME=114.00 | IS=7 | ZCALC( 48)= | 643.20 | ZCALC( 47)= | 628.20 | AINCW= | 630.48 | AINCHI= | 628.20 | DELZ= | 2.272  | ALP=453.90 | ALPHI=453.87 |

IGNITION TIME, TIME (S) 114.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>ROTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 3857369.4     | 867171.15    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 3864039.2     | 868670.56    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FJ                   | 31571.236     | 7097.4963    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .12239082*10  | .27514552*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 254.88795     | 254.88795    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .12739369*10  | .28638566*09 |
| THRUST COEFFICIENT                         | CF                   | 1.6287107     | 1.6287107    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 1528.9209     | 3370.6935    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SMDOTN               | 501609.50     | 1105859.7    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 16.944053     | 37.355244    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 53.430045     | 117.79485    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 119.69141     | 185522.06    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 4.8698565     | 297176.87    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 4612.3007     | 10163.973    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 535.36272     | 1180.2728    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1593482     | 1.1593482    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AM*                  | 12.749134     | 28.107029    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1551.7372     | 5091.0012    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .99302330-01  | .99302330-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | .15346443*09  | 218.23021    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .52900357*11  | 76725.481    |
| BURN AREA (M**2,IN**2)                     | AHH                  | 1.2931977     | 2004.4604    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .64872492-02  | .25540351    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.0820361     | 42.599611    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .24352443     | 14860.772    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.860308     | 3347781.4    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3327.9879     | 5990.3781    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 118.39821     | 183517.60    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00300000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | .46243658     | 282196.12    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 281.00554     | 17148010.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | .14815560*09  | 214.88153    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .50491896*11  | 73232.304    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI*1,1)          | .64530356-02  | .25408802    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI*2,1)          | .64481213-02  | .25386304    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI*1,1)         | .74826400     | 29.460500    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI*2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.347463     | 1040330.0    |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)     | PRNT(NI*2,3)         | 3327.3378     | 5989.2081    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.6013251     | 2482.0589    |
| EXPANSION RATIO                            | EPR                  | 6.7122629     | 6.7122629    |
| PRESSURE RATIO                             | PEPO                 | .23549760-01  | .23549760-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 3.0000000     | 3.0000000    |

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## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO     | P      | T       | U      | M    | LP     | AP       | WDOT    | DWDUT  | DW/DT  | RB     | TAU    | RBTO   | TAUTO |
|-----------------------------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|-------|
|                             | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FIRE                        | 218.23 | 218.23 | 5990.38 | 8.00   | .002 | 447.98 | 15927.05 | 84.59   | 32.41  | -52.17 | .2549  | 42.600 | .0000  | .000  |
| 15.000                      | 218.23 | 218.23 | 5990.37 | 18.60  | .005 | 448.25 | 15987.34 | 196.93  | 108.70 | -3.64  | .2549  | 42.552 | .0000  | .000  |
| 30.000                      | 218.23 | 218.22 | 5990.35 | 29.18  | .008 | 448.52 | 16006.79 | 339.35  | 138.78 | -3.64  | .2549  | 42.548 | .0000  | .000  |
| 45.000                      | 218.22 | 218.21 | 5990.32 | 39.74  | .011 | 448.78 | 16026.20 | 421.83  | 168.85 | -3.65  | .2549  | 42.543 | .0000  | .000  |
| 60.000                      | 218.21 | 218.19 | 5990.28 | 50.29  | .014 | 449.05 | 16045.57 | 534.43  | 198.93 | -3.65  | .2550  | 42.539 | .0000  | .000  |
| 75.000                      | 218.21 | 218.17 | 5990.24 | 60.83  | .017 | 449.32 | 16064.89 | 647.09  | 109.01 | -3.66  | .2550  | 42.534 | .0000  | .000  |
| 90.000                      | 218.19 | 218.14 | 5990.18 | 71.35  | .020 | 449.58 | 16084.17 | 759.83  | 109.08 | -3.66  | .2550  | 42.529 | .0000  | .000  |
| 105.000                     | 218.18 | 218.11 | 5990.12 | 81.85  | .023 | 449.85 | 16103.41 | 872.66  | 109.16 | -3.67  | .2550  | 42.524 | .0000  | .000  |
| 116.761                     | 218.17 | 218.08 | 5990.07 | 90.08  | .026 | 450.06 | 16118.46 | 961.17  | 85.64  | -2.88  | .2550  | 42.519 | .0000  | .000  |
| 119.771                     | 218.16 | 218.04 | 5989.91 | 110.43 | .032 | 388.48 | 13151.04 | 961.17  | .00    | .00    | .2550  | 42.519 | .0000  | .000  |
| 131.771                     | 218.14 | 218.04 | 5990.00 | 98.76  | .028 | 744.35 | 14755.88 | 964.47  | .00    | -3.30  | .2550  | 42.519 | .0000  | .000  |
| 143.919                     | 218.11 | 218.02 | 5990.02 | 95.87  | .027 | 449.09 | 16057.42 | 1018.77 | 51.43  | -2.87  | .2550  | 42.511 | .0000  | .000  |
| 155.919                     | 218.09 | 217.98 | 5989.94 | 106.28 | .030 | 449.84 | 16091.19 | 1131.52 | 109.08 | -3.67  | .2550  | 42.506 | .0000  | .000  |
| 173.919                     | 218.07 | 217.93 | 5989.85 | 116.67 | .033 | 450.55 | 16124.78 | 1244.49 | 109.29 | -3.68  | .2551  | 42.500 | .0000  | .000  |
| 195.919                     | 218.05 | 217.88 | 5989.75 | 127.04 | .036 | 451.21 | 16158.20 | 1357.66 | 109.48 | -3.69  | .2551  | 42.495 | .0000  | .000  |
| 203.919                     | 218.02 | 217.83 | 5989.65 | 137.40 | .039 | 451.83 | 16191.43 | 1471.03 | 109.66 | -3.71  | .2552  | 42.489 | .0000  | .000  |
| 218.919                     | 217.99 | 217.77 | 5989.53 | 147.74 | .042 | 452.41 | 16224.49 | 1584.60 | 109.84 | -3.72  | .2553  | 42.483 | .0000  | .000  |
| 233.919                     | 217.96 | 217.71 | 5989.41 | 158.07 | .045 | 452.94 | 16257.38 | 1698.34 | 110.01 | -3.74  | .2554  | 42.477 | .0000  | .000  |
| 245.917                     | 217.93 | 217.64 | 5989.28 | 168.38 | .048 | 453.42 | 16290.28 | 1812.26 | 110.17 | -3.75  | .2555  | 42.471 | .0000  | .000  |
| 263.919                     | 217.91 | 217.59 | 5989.17 | 176.59 | .050 | 453.76 | 16316.05 | 1933.20 | 87.18  | -3.76  | .2555  | 42.444 | .0000  | .000  |
| 278.919                     | 217.90 | 217.57 | 5989.14 | 179.08 | .051 | 226.92 | 16346.39 | 1933.53 | 26.35  | -3.98  | .2555  | 42.360 | .0000  | .000  |
| 293.919                     | 217.90 | 217.57 | 5989.14 | 178.99 | .051 | .00    | 16387.13 | 1937.31 | .00    | -3.78  | .2555  | 42.252 | .0000  | .000  |
| 304.919                     | 217.90 | 217.57 | 5989.14 | 178.99 | .051 | .00    | 16419.12 | 1941.10 | .00    | -3.78  | .2555  | 42.143 | .0000  | .000  |
| 323.919                     | 217.90 | 217.57 | 5989.14 | 178.99 | .051 | .00    | 16450.94 | 1944.90 | .00    | -3.80  | .2555  | 42.035 | .0000  | .000  |
| 338.919                     | 217.90 | 217.57 | 5989.14 | 179.00 | .051 | .00    | 16482.58 | 1948.72 | .00    | -3.82  | .2555  | 41.927 | .0000  | .000  |
| 353.919                     | 217.90 | 217.57 | 5989.14 | 179.02 | .051 | .00    | 16514.05 | 1952.55 | .00    | -3.83  | .2555  | 41.819 | .0000  | .000  |
| 368.919                     | 217.90 | 217.57 | 5989.14 | 179.04 | .051 | .00    | 16545.23 | 1956.39 | .00    | -3.84  | .2555  | 41.710 | .0000  | .000  |
| 383.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16576.44 | 1960.25 | .00    | -3.86  | .2555  | 41.602 | .0000  | .000  |
| 398.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16607.37 | 1964.11 | .00    | -3.87  | .2555  | 41.494 | .0000  | .000  |
| 413.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16638.85 | 1967.97 | .00    | -3.87  | .2555  | 41.386 | .0000  | .000  |
| 428.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16669.10 | 1971.84 | .00    | -3.88  | .2555  | 41.278 | .0000  | .000  |
| 443.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16700.10 | 1975.71 | .00    | -3.88  | .2555  | 41.170 | .0000  | .000  |
| 458.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16731.10 | 1979.58 | .00    | -3.88  | .2555  | 41.062 | .0000  | .000  |
| 473.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16762.10 | 1983.45 | .00    | -3.88  | .2555  | 40.954 | .0000  | .000  |
| 488.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16793.10 | 1987.32 | .00    | -3.88  | .2555  | 40.846 | .0000  | .000  |
| 503.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16824.10 | 1991.19 | .00    | -3.88  | .2555  | 40.738 | .0000  | .000  |
| 518.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16855.10 | 1995.06 | .00    | -3.88  | .2555  | 40.630 | .0000  | .000  |
| 533.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16886.10 | 1998.93 | .00    | -3.88  | .2555  | 40.522 | .0000  | .000  |
| 548.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16917.10 | 2002.80 | .00    | -3.88  | .2555  | 40.414 | .0000  | .000  |
| 563.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16948.10 | 2006.67 | .00    | -3.88  | .2555  | 40.306 | .0000  | .000  |
| 578.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 16979.10 | 2010.54 | .00    | -3.88  | .2555  | 40.198 | .0000  | .000  |
| 593.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17010.10 | 2014.41 | .00    | -3.88  | .2555  | 40.090 | .0000  | .000  |
| 608.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17041.10 | 2018.28 | .00    | -3.88  | .2555  | 39.982 | .0000  | .000  |
| 623.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17072.10 | 2022.15 | .00    | -3.88  | .2555  | 39.874 | .0000  | .000  |
| 638.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17103.10 | 2026.02 | .00    | -3.88  | .2555  | 39.766 | .0000  | .000  |
| 653.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17134.10 | 2029.89 | .00    | -3.88  | .2555  | 39.658 | .0000  | .000  |
| 668.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17165.10 | 2033.76 | .00    | -3.88  | .2555  | 39.550 | .0000  | .000  |
| 683.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17196.10 | 2037.63 | .00    | -3.88  | .2555  | 39.442 | .0000  | .000  |
| 698.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17227.10 | 2041.50 | .00    | -3.88  | .2555  | 39.334 | .0000  | .000  |
| 713.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17258.10 | 2045.37 | .00    | -3.88  | .2555  | 39.226 | .0000  | .000  |
| 728.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17289.10 | 2049.24 | .00    | -3.88  | .2555  | 39.118 | .0000  | .000  |
| 743.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17320.10 | 2053.11 | .00    | -3.88  | .2555  | 39.010 | .0000  | .000  |
| 758.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17351.10 | 2056.98 | .00    | -3.88  | .2555  | 38.902 | .0000  | .000  |
| 773.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17382.10 | 2060.85 | .00    | -3.88  | .2555  | 38.794 | .0000  | .000  |
| 788.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17413.10 | 2064.72 | .00    | -3.88  | .2555  | 38.686 | .0000  | .000  |
| 803.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17444.10 | 2068.59 | .00    | -3.88  | .2555  | 38.578 | .0000  | .000  |
| 818.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17475.10 | 2072.46 | .00    | -3.88  | .2555  | 38.470 | .0000  | .000  |
| 833.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17506.10 | 2076.33 | .00    | -3.88  | .2555  | 38.362 | .0000  | .000  |
| 848.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17537.10 | 2080.20 | .00    | -3.88  | .2555  | 38.254 | .0000  | .000  |
| 863.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17568.10 | 2084.07 | .00    | -3.88  | .2555  | 38.146 | .0000  | .000  |
| 878.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17599.10 | 2087.94 | .00    | -3.88  | .2555  | 38.038 | .0000  | .000  |
| 893.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17630.10 | 2091.81 | .00    | -3.88  | .2555  | 37.930 | .0000  | .000  |
| 908.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17661.10 | 2095.68 | .00    | -3.88  | .2555  | 37.822 | .0000  | .000  |
| 923.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17692.10 | 2099.55 | .00    | -3.88  | .2555  | 37.714 | .0000  | .000  |
| 938.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17723.10 | 2103.42 | .00    | -3.88  | .2555  | 37.606 | .0000  | .000  |
| 953.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17754.10 | 2107.29 | .00    | -3.88  | .2555  | 37.498 | .0000  | .000  |
| 968.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17785.10 | 2111.16 | .00    | -3.88  | .2555  | 37.390 | .0000  | .000  |
| 983.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17816.10 | 2115.03 | .00    | -3.88  | .2555  | 37.282 | .0000  | .000  |
| 998.919                     | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17847.10 | 2118.90 | .00    | -3.88  | .2555  | 37.174 | .0000  | .000  |
| 1013.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17878.10 | 2122.77 | .00    | -3.88  | .2555  | 37.066 | .0000  | .000  |
| 1028.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17909.10 | 2126.64 | .00    | -3.88  | .2555  | 36.958 | .0000  | .000  |
| 1043.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17940.10 | 2130.51 | .00    | -3.88  | .2555  | 36.850 | .0000  | .000  |
| 1058.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 17971.10 | 2134.38 | .00    | -3.88  | .2555  | 36.742 | .0000  | .000  |
| 1073.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 18002.10 | 2138.25 | .00    | -3.88  | .2555  | 36.634 | .0000  | .000  |
| 1088.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 18033.10 | 2142.12 | .00    | -3.88  | .2555  | 36.526 | .0000  | .000  |
| 1103.919                    | 217.90 | 217.57 | 5989.14 | 179.06 | .051 | .00    | 18064.10 | 2145.99 | .00    | -3.88  | .2555  | 36.418 | .0000  | .000  |
| 1118.919                    | 217.90 | 217.57 | 5       |        |      |        |          |         |        |        |        |        |        |       |

|          |        |        |         |        |      |        |          |         |       |       |       |        |       |      |
|----------|--------|--------|---------|--------|------|--------|----------|---------|-------|-------|-------|--------|-------|------|
| 628-204  | 217-23 | 216-29 | 5986-79 | 304-19 | .087 | 340-42 | 16222-89 | 3241-51 | 64-77 | -3-70 | .2550 | 42-168 | .0000 | .000 |
| 643-204  | 217-23 | 216-28 | 5986-78 | 304-56 | .087 | 113-47 | 16244-92 | 3249-86 | 4-61  | -3-74 | .2550 | 42-064 | .0000 | .000 |
| 658-204  | 217-23 | 216-28 | 5986-78 | 304-39 | .087 | .00    | 16272-97 | 3253-60 | .00   | -3-74 | .2550 | 41-955 | .0000 | .000 |
| 673-204  | 217-23 | 216-28 | 5986-78 | 304-31 | .087 | .00    | 16295-87 | 3257-35 | .00   | -3-75 | .2550 | 41-847 | .0000 | .000 |
| 685-204  | 217-23 | 216-28 | 5986-79 | 304-24 | .087 | .00    | 16318-64 | 3261-11 | .00   | -3-76 | .2550 | 41-738 | .0000 | .000 |
| 703-204  | 217-23 | 216-28 | 5986-79 | 304-17 | .087 | .00    | 16341-28 | 3264-89 | .00   | -3-77 | .2550 | 41-630 | .0000 | .000 |
| 718-204  | 217-23 | 216-28 | 5986-79 | 304-10 | .087 | .00    | 16363-79 | 3268-67 | .00   | -3-77 | .2550 | 41-522 | .0000 | .000 |
| 725-191  | 217-23 | 216-28 | 5986-79 | 304-07 | .087 | .00    | 16375-73 | 3270-69 | .00   | -2-02 | .2550 | 41-464 | .0000 | .000 |
| 741-191  | 217-23 | 216-28 | 5986-78 | 304-29 | .087 | .00    | 16382-80 | 3274-49 | .00   | -3-80 | .2550 | 41-140 | .0000 | .000 |
| 746-336  | 217-23 | 216-28 | 5986-78 | 304-37 | .087 | .00    | 16385-20 | 3275-79 | .00   | -1-30 | .2550 | 41-240 | .0000 | .000 |
| 746-346  | 217-21 | 215-97 | 5985-67 | 347-98 | .094 | .00    | 14349-56 | 3275-80 | .00   | -.00  | .2548 | 41-029 | .0000 | .000 |
| 761-346  | 217-11 | 215-97 | 5986-05 | 333-88 | .095 | .00    | 14972-15 | 3279-19 | .00   | -3-39 | .2548 | 41-104 | .0000 | .000 |
| 770-346  | 217-02 | 215-97 | 5986-38 | 328-86 | .092 | .00    | 15577-03 | 3282-73 | .00   | -3-54 | .2548 | 41-178 | .0000 | .000 |
| 791-346  | 216-94 | 215-97 | 5986-68 | 308-82 | .088 | .00    | 16224-19 | 3286-41 | .00   | -3-66 | .2548 | 41-253 | .0000 | .000 |
| 794-831  | 216-93 | 215-97 | 5986-74 | 306-15 | .087 | .00    | 16370-23 | 3287-29 | .00   | -.88  | .2548 | 41-270 | .0000 | .000 |
| 809-831  | 216-93 | 215-97 | 5986-73 | 306-63 | .087 | .00    | 16363-57 | 3291-04 | .00   | -3-79 | .2548 | 41-093 | .0000 | .000 |
| 824-831  | 216-93 | 215-97 | 5986-72 | 307-11 | .088 | .00    | 16356-92 | 3294-86 | .00   | -3-79 | .2548 | 40-916 | .0000 | .000 |
| 839-831  | 216-94 | 215-97 | 5986-71 | 307-58 | .088 | .00    | 16350-28 | 3298-65 | .00   | -3-79 | .2548 | 40-739 | .0000 | .000 |
| 854-781  | 216-94 | 215-97 | 5986-70 | 308-06 | .088 | .00    | 16343-67 | 3302-42 | .00   | -3-77 | .2548 | 40-563 | .0000 | .000 |
| 869-781  | 216-94 | 215-97 | 5986-67 | 308-94 | .088 | .00    | 16315-82 | 3306-20 | .00   | -3-78 | .2548 | 39-779 | .0000 | .000 |
| 884-781  | 216-95 | 215-97 | 5986-65 | 309-82 | .088 | .00    | 16287-96 | 3309-97 | .00   | -3-77 | .2548 | 39-025 | .0000 | .000 |
| 899-781  | 216-96 | 215-97 | 5986-63 | 310-70 | .089 | .00    | 16260-09 | 3313-74 | .00   | -3-77 | .2548 | 38-255 | .0000 | .000 |
| 914-781  | 216-96 | 215-97 | 5986-61 | 311-59 | .089 | .00    | 16232-22 | 3317-50 | .00   | -3-76 | .2548 | 37-486 | .0000 | .000 |
| 929-781  | 216-97 | 215-97 | 5986-59 | 312-47 | .089 | .00    | 16204-33 | 3321-25 | .00   | -3-75 | .2548 | 36-717 | .0000 | .000 |
| 944-781  | 216-97 | 215-97 | 5986-57 | 313-36 | .089 | .00    | 16176-44 | 3325-00 | .00   | -3-75 | .2548 | 35-948 | .0000 | .000 |
| 959-781  | 216-98 | 215-97 | 5986-55 | 314-26 | .090 | .00    | 16148-55 | 3328-74 | .00   | -3-74 | .2548 | 35-178 | .0000 | .000 |
| 974-781  | 216-98 | 215-97 | 5986-52 | 315-15 | .090 | .00    | 16120-65 | 3332-48 | .00   | -3-73 | .2548 | 34-409 | .0000 | .000 |
| 989-781  | 216-99 | 215-97 | 5986-50 | 316-05 | .090 | .00    | 16092-74 | 3336-21 | .00   | -3-73 | .2548 | 33-640 | .0000 | .000 |
| 1004-781 | 217-00 | 215-97 | 5986-48 | 316-95 | .090 | .00    | 16064-82 | 3339-93 | .00   | -3-72 | .2548 | 32-871 | .0000 | .000 |
| 1019-781 | 217-00 | 215-97 | 5986-46 | 317-86 | .091 | .00    | 16036-89 | 3343-64 | .00   | -3-72 | .2548 | 32-101 | .0000 | .000 |
| 1034-781 | 217-01 | 215-97 | 5986-43 | 318-76 | .091 | .00    | 16008-96 | 3347-35 | .00   | -3-71 | .2548 | 31-332 | .0000 | .000 |
| 1049-781 | 217-01 | 215-97 | 5986-40 | 319-13 | .091 | .00    | 15997-77 | 3348-84 | .00   | -1-48 | .2548 | 31-024 | .0000 | .000 |
| 1064-781 | 217-02 | 215-97 | 5986-40 | 320-04 | .091 | .00    | 15969-84 | 3352-54 | .00   | -3-70 | .2548 | 30-483 | .0000 | .000 |
| 1079-781 | 217-02 | 215-97 | 5986-38 | 320-95 | .092 | .00    | 15941-80 | 3356-23 | .00   | -3-69 | .2548 | 29-942 | .0000 | .000 |
| 1094-171 | 217-03 | 215-97 | 5986-36 | 321-77 | .092 | .00    | 15916-69 | 3359-52 | .00   | -3-29 | .2548 | 29-459 | .0000 | .000 |
| AFT(A)   | 214-88 | 205-02 | 5981-05 | 996-16 | .285 | .0000  | 15823-73 | 3370-69 | .00   | -6-79 | .2541 | 29-460 | .0000 | .000 |
| AFT(B)   | 214-88 | 214-88 | 5989-21 | -665   | .000 | .0000  | 15413-12 | 4-39    | .00   | -4-39 | .2539 | 20-670 | .0000 | .000 |



|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | *SLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1-1676+02                            | 2-1817+02  | 2-1806+02 | 5.9901+03   | 8.8212+01   | 1-6460+04     | 0-0000          | 0-0000        | 0-0000       | 0-0000              | 9-6117+02       |
| AFT     | 1-1677+02                            | 2-1812+02  | 2-1804+02 | 5.9899+03   | 8.8229+01   | 1-6460+04     | 0-0000          | 0-0000        | 0-0000       | 0-0000              | 9-6117+02       |

GAS BUILDUP IN SLOT, DA/DT = -2.5675-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+02 | 2.1791+02 | 2.1757+02 | 5.9891+03 | 1.8218+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.9713+03 |
| AFT     | 4.2706+02 | 2.1778+02 | 2.1744+02 | 5.9886+03 | 1.8227+02 | 1.6393+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.9713+03 |

GAS BUILDUP IN SLOT, DW/DT = -2.5492-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+02 | 2.1723+02 | 2.1628+02 | 5.9868+03 | 3.5441+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.2758+03 |
| AFT     | 7.4635+02 | 2.1692+02 | 2.1597+02 | 5.9857+03 | 3.0479+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3.2758+03 |

GAS BUILDUP IN SLOT, DW/DY = -2.5314-03

|                                                                                                                                 |              |               |                  |               |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|------------------|---------------|
| HEB BURNOUT INCREMENT LOCATION = 248.9190                                                                                       | SECTOR NO. 1 | TAU = 42.5763 | TAUWDP = 42.5763 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 248.9190                                                                                       | SECTOR NO. 2 | TAU = 42.5763 | TAUWDP = 42.5763 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 248.9190                                                                                       | SECTOR NO. 3 | TAU = 42.5763 | TAUWDP = 42.5763 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 248.9190                                                                                       | SECTOR NO. 4 | TAU = 42.5763 | TAUWDP = 42.5763 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 263.9190                                                                                       | SECTOR NO. 5 | TAU = 42.4680 | TAUWDP = 42.4680 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 263.9190                                                                                       | SECTOR NO. 6 | TAU = 42.4680 | TAUWDP = 42.4680 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 263.9190                                                                                       | SECTOR NO. 7 | TAU = 42.4680 | TAUWDP = 42.4680 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 263.9190                                                                                       | SECTOR NO. 8 | TAU = 42.4680 | TAUWDP = 42.4680 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 598.2640                                                                                       | SECTOR NO. 2 | TAU = 42.3887 | TAUWDP = 42.3887 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 598.2640                                                                                       | SECTOR NO. 3 | TAU = 42.3887 | TAUWDP = 42.3887 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 613.2640                                                                                       | SECTOR NO. 1 | TAU = 42.2803 | TAUWDP = 42.2803 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 613.2640                                                                                       | SECTOR NO. 4 | TAU = 42.2803 | TAUWDP = 42.2803 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 613.2640                                                                                       | SECTOR NO. 5 | TAU = 42.2803 | TAUWDP = 42.2803 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 613.2640                                                                                       | SECTOR NO. 6 | TAU = 42.2803 | TAUWDP = 42.2803 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 613.2640                                                                                       | SECTOR NO. 7 | TAU = 42.2803 | TAUWDP = 42.2803 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 613.2640                                                                                       | SECTOR NO. 8 | TAU = 42.2803 | TAUWDP = 42.2803 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 628.2640                                                                                       | SECTOR NO. 5 | TAU = 42.1719 | TAUWDP = 42.1719 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 628.2640                                                                                       | SECTOR NO. 6 | TAU = 42.1719 | TAUWDP = 42.1719 | TIME = 114.00 |
| HEB BURNOUT INCREMENT LOCATION = 628.2640                                                                                       | SECTOR NO. 7 | TAU = 42.1719 | TAUWDP = 42.1719 | TIME = 114.00 |
| *PARTBN* TIME=114.50 IS=2 ZCALC(18)= 233.92 ZCALC(17)= 218.92 AINCW= 234.96 AINCHI= 218.92 DELZ= 16.039 ALP=453.88 ALPHI=453.40 |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=1 ZCALC(19)= 248.92 ZCALC(18)= 233.92 AINCW= 241.97 AINCHI= 233.92 DELZ= 7.454 ALP=453.88 ALPHI=453.68  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=3 ZCALC(19)= 248.92 ZCALC(18)= 233.92 AINCW= 236.14 AINCHI= 233.92 DELZ= 2.225 ALP=453.88 ALPHI=453.85  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=4 ZCALC(19)= 248.92 ZCALC(18)= 233.92 AINCW= 243.15 AINCHI= 233.92 DELZ= 9.231 ALP=453.87 ALPHI=453.63  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=5 ZCALC(20)= 263.92 ZCALC(19)= 248.92 AINCW= 251.46 AINCHI= 248.92 DELZ= 2.546 ALP=453.86 ALPHI=453.62  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=6 ZCALC(20)= 263.92 ZCALC(19)= 248.92 AINCW= 253.95 AINCHI= 248.92 DELZ= 5.028 ALP=453.86 ALPHI=453.75  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=7 ZCALC(20)= 263.92 ZCALC(19)= 248.92 AINCW= 253.46 AINCHI= 248.92 DELZ= 4.542 ALP=453.86 ALPHI=453.76  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=8 ZCALC(20)= 263.92 ZCALC(19)= 248.92 AINCW= 250.61 AINCHI= 248.92 DELZ= 1.689 ALP=453.86 ALPHI=453.85  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=1 ZCALC(35)= 457.06 ZCALC(34)= 442.06 AINCW= 457.06 AINCHI= 450.55 DELZ= 6.515 ALP=315.76 ALPHI=136.10  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=2 ZCALC(35)= 457.06 ZCALC(34)= 442.06 AINCW= 457.06 AINCHI= 451.20 DELZ= 5.862 ALP=315.64 ALPHI=152.50  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=3 ZCALC(35)= 457.06 ZCALC(34)= 442.06 AINCW= 457.06 AINCHI= 451.08 DELZ= 5.985 ALP=315.66 ALPHI=149.40  |              |               |                  |               |
| *PARTBN* TIME=114.50 IS=4 ZCALC(35)= 457.06 ZCALC(34)= 442.06 AINCW= 457.06 AINCHI= 450.37 DELZ= 6.695 ALP=315.79 ALPHI=131.56  |              |               |                  |               |

|                                |             |          |             |        |             |        |         |        |         |         |       |        |        |        |        |        |
|--------------------------------|-------------|----------|-------------|--------|-------------|--------|---------|--------|---------|---------|-------|--------|--------|--------|--------|--------|
| *PARTBN*                       | TIME=114.50 | IS=5     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.53  | DELZ= | 7.534  | ALP=   | 315.94 | ALPHI= | 110.48 |
| *PARTBN*                       | TIME=114.50 | IS=6     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.28  | DELZ= | 7.785  | ALP=   | 315.98 | ALPHI= | 104.16 |
| *PARTBN*                       | TIME=114.50 | IS=7     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.32  | DELZ= | 7.737  | ALP=   | 315.97 | ALPHI= | 105.38 |
| *PARTBN*                       | TIME=114.50 | IS=8     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.61  | DELZ= | 7.447  | ALP=   | 315.92 | ALPHI= | 112.67 |
| *PARTBN*                       | TIME=114.50 | IS=1     | ZCALC( 45)= | 598.20 | ZCALC( 44)= | 583.20 | AINCW=  | 590.39 | AINCHI= | 583.20  | DELZ= | 15.191 | ALP=   | 453.98 | ALPHI= | 453.45 |
| *PARTBN*                       | TIME=114.50 | IS=2     | ZCALC( 45)= | 598.20 | ZCALC( 44)= | 583.20 | AINCW=  | 591.72 | AINCHI= | 583.20  | DELZ= | 8.515  | ALP=   | 453.99 | ALPHI= | 453.72 |
| *PARTBN*                       | TIME=114.50 | IS=3     | ZCALC( 45)= | 598.20 | ZCALC( 44)= | 583.20 | AINCW=  | 592.96 | AINCHI= | 583.20  | DELZ= | 9.759  | ALP=   | 453.99 | ALPHI= | 453.67 |
| *PARTBN*                       | TIME=114.50 | IS=4     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 600.23 | AINCHI= | 598.20  | DELZ= | 2.029  | ALP=   | 453.97 | ALPHI= | 453.94 |
| *PARTBN*                       | TIME=114.50 | IS=5     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 608.89 | AINCHI= | 598.20  | DELZ= | 10.681 | ALP=   | 453.95 | ALPHI= | 453.60 |
| *PARTBN*                       | TIME=114.50 | IS=6     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 611.46 | AINCHI= | 598.20  | DELZ= | 13.251 | ALP=   | 453.94 | ALPHI= | 453.50 |
| *PARTBN*                       | TIME=114.50 | IS=7     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 610.95 | AINCHI= | 598.20  | DELZ= | 12.748 | ALP=   | 453.95 | ALPHI= | 453.52 |
| *PARTBN*                       | TIME=114.50 | IS=8     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 607.99 | AINCHI= | 598.20  | DELZ= | 9.788  | ALP=   | 453.95 | ALPHI= | 453.64 |
| *PARTBN*                       | TIME=114.50 | IS=1     | ZCALC( 18)= | 233.92 | ZCALC( 17)= | 218.92 | AINCW=  | 234.96 | AINCHI= | 218.92  | DELZ= | 16.039 | ALP=   | 453.88 | ALPHI= | 453.40 |
| *PARTBN*                       | TIME=114.50 | IS=2     | ZCALC( 18)= | 233.92 | ZCALC( 17)= | 218.92 | AINCW=  | 241.37 | AINCHI= | 218.92  | DELZ= | 7.454  | ALP=   | 453.88 | ALPHI= | 453.68 |
| *PARTBN*                       | TIME=114.50 | IS=3     | ZCALC( 18)= | 233.92 | ZCALC( 17)= | 218.92 | AINCW=  | 236.14 | AINCHI= | 233.92  | DELZ= | 2.225  | ALP=   | 453.88 | ALPHI= | 453.85 |
| *PARTBN*                       | TIME=114.50 | IS=4     | ZCALC( 18)= | 233.92 | ZCALC( 17)= | 218.92 | AINCW=  | 243.15 | AINCHI= | 233.92  | DELZ= | 9.231  | ALP=   | 453.87 | ALPHI= | 453.63 |
| *PARTBN*                       | TIME=114.50 | IS=5     | ZCALC( 20)= | 263.92 | ZCALC( 19)= | 248.92 | AINCW=  | 251.46 | AINCHI= | 248.92  | DELZ= | 2.546  | ALP=   | 453.86 | ALPHI= | 453.82 |
| *PARTBN*                       | TIME=114.50 | IS=6     | ZCALC( 20)= | 263.92 | ZCALC( 19)= | 248.92 | AINCW=  | 253.95 | AINCHI= | 248.92  | DELZ= | 5.028  | ALP=   | 453.86 | ALPHI= | 453.75 |
| *PARTBN*                       | TIME=114.50 | IS=7     | ZCALC( 20)= | 263.92 | ZCALC( 19)= | 248.92 | AINCW=  | 253.46 | AINCHI= | 248.92  | DELZ= | 4.542  | ALP=   | 453.86 | ALPHI= | 453.76 |
| *PARTBN*                       | TIME=114.50 | IS=8     | ZCALC( 20)= | 263.92 | ZCALC( 19)= | 248.92 | AINCW=  | 253.61 | AINCHI= | 248.92  | DELZ= | 1.689  | ALP=   | 453.86 | ALPHI= | 453.85 |
| *PARTBN*                       | TIME=114.50 | IS=1     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 450.55  | DELZ= | 6.515  | ALP=   | 315.76 | ALPHI= | 136.10 |
| *PARTBN*                       | TIME=114.50 | IS=2     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 451.20  | DELZ= | 5.862  | ALP=   | 315.64 | ALPHI= | 152.50 |
| *PARTBN*                       | TIME=114.50 | IS=3     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 451.08  | DELZ= | 5.985  | ALP=   | 315.66 | ALPHI= | 149.50 |
| *PARTBN*                       | TIME=114.50 | IS=4     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 450.37  | DELZ= | 6.695  | ALP=   | 315.79 | ALPHI= | 131.56 |
| *PARTBN*                       | TIME=114.50 | IS=5     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.53  | DELZ= | 7.534  | ALP=   | 315.94 | ALPHI= | 110.48 |
| *PARTBN*                       | TIME=114.50 | IS=6     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.28  | DELZ= | 7.785  | ALP=   | 315.98 | ALPHI= | 104.16 |
| *PARTBN*                       | TIME=114.50 | IS=7     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.32  | DELZ= | 7.737  | ALP=   | 315.97 | ALPHI= | 105.38 |
| *PARTBN*                       | TIME=114.50 | IS=8     | ZCALC( 35)= | 457.06 | ZCALC( 34)= | 442.06 | AINCW=  | 457.06 | AINCHI= | 449.61  | DELZ= | 7.447  | ALP=   | 315.92 | ALPHI= | 112.67 |
| *PARTBN*                       | TIME=114.50 | IS=1     | ZCALC( 45)= | 598.20 | ZCALC( 44)= | 583.20 | AINCW=  | 590.39 | AINCHI= | 583.20  | DELZ= | 15.191 | ALP=   | 453.98 | ALPHI= | 453.45 |
| *PARTBN*                       | TIME=114.50 | IS=2     | ZCALC( 45)= | 598.20 | ZCALC( 44)= | 583.20 | AINCW=  | 591.72 | AINCHI= | 583.20  | DELZ= | 8.515  | ALP=   | 453.99 | ALPHI= | 453.72 |
| *PARTBN*                       | TIME=114.50 | IS=3     | ZCALC( 45)= | 598.20 | ZCALC( 44)= | 583.20 | AINCW=  | 592.96 | AINCHI= | 583.20  | DELZ= | 9.759  | ALP=   | 453.99 | ALPHI= | 453.67 |
| *PARTBN*                       | TIME=114.50 | IS=4     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 600.23 | AINCHI= | 598.20  | DELZ= | 2.029  | ALP=   | 453.97 | ALPHI= | 453.94 |
| *PARTBN*                       | TIME=114.50 | IS=5     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 608.89 | AINCHI= | 598.20  | DELZ= | 10.681 | ALP=   | 453.95 | ALPHI= | 453.60 |
| *PARTBN*                       | TIME=114.50 | IS=6     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 611.46 | AINCHI= | 598.20  | DELZ= | 13.251 | ALP=   | 453.94 | ALPHI= | 453.50 |
| *PARTBN*                       | TIME=114.50 | IS=7     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 610.95 | AINCHI= | 598.20  | DELZ= | 12.748 | ALP=   | 453.95 | ALPHI= | 453.52 |
| *PARTBN*                       | TIME=114.50 | IS=8     | ZCALC( 46)= | 613.20 | ZCALC( 45)= | 598.20 | AINCW=  | 607.99 | AINCHI= | 598.20  | DELZ= | 9.788  | ALP=   | 453.95 | ALPHI= | 453.64 |
| 45B BURNOUT INCREMENT LOCATION | =           | 218.9190 | SECTOR NO.  | 2      | TAU         | =      | 42.7928 | TAUWDP | =       | 42.7928 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 218.9190 | SECTOR NO.  | 3      | TAU         | =      | 42.7928 | TAUWDP | =       | 42.7928 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 233.9190 | SECTOR NO.  | 1      | TAU         | =      | 42.6845 | TAUWDP | =       | 42.6845 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 233.9190 | SECTOR NO.  | 2      | TAU         | =      | 42.6845 | TAUWDP | =       | 42.6845 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 233.9190 | SECTOR NO.  | 3      | TAU         | =      | 42.6845 | TAUWDP | =       | 42.6845 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 233.9190 | SECTOR NO.  | 4      | TAU         | =      | 42.6845 | TAUWDP | =       | 42.6845 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 233.9190 | SECTOR NO.  | 5      | TAU         | =      | 42.6845 | TAUWDP | =       | 42.6845 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 233.9190 | SECTOR NO.  | 6      | TAU         | =      | 42.6845 | TAUWDP | =       | 42.6845 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 248.9190 | SECTOR NO.  | 5      | TAU         | =      | 42.5763 | TAUWDP | =       | 42.5763 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 248.9190 | SECTOR NO.  | 6      | TAU         | =      | 42.5763 | TAUWDP | =       | 42.5763 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 248.9190 | SECTOR NO.  | 7      | TAU         | =      | 42.5763 | TAUWDP | =       | 42.5763 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 248.9190 | SECTOR NO.  | 8      | TAU         | =      | 42.5763 | TAUWDP | =       | 42.5763 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 583.2040 | SECTOR NO.  | 1      | TAU         | =      | 42.4970 | TAUWDP | =       | 42.4970 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 583.2040 | SECTOR NO.  | 2      | TAU         | =      | 42.4970 | TAUWDP | =       | 42.4970 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 583.2040 | SECTOR NO.  | 3      | TAU         | =      | 42.4970 | TAUWDP | =       | 42.4970 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 583.2040 | SECTOR NO.  | 4      | TAU         | =      | 42.4970 | TAUWDP | =       | 42.4970 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 598.2040 | SECTOR NO.  | 1      | TAU         | =      | 42.3887 | TAUWDP | =       | 42.3887 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 598.2040 | SECTOR NO.  | 4      | TAU         | =      | 42.3887 | TAUWDP | =       | 42.3887 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 598.2040 | SECTOR NO.  | 5      | TAU         | =      | 42.3887 | TAUWDP | =       | 42.3887 | TIME  | =      | 114.50 |        |        |        |
| 45B BURNOUT INCREMENT LOCATION | =           | 598.2040 | SECTOR NO.  | 6      | TAU         | =      | 42.3887 | TAUWDP | =       | 42.3887 | TIME  | =      | 114.50 |        |        |        |





IGNITION TIME, TIME (S) 115.00000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|-----------------------------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                                               |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 2090118.2     | 649724.42    |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 2896269.2     | 651107.22    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FTI                  | 23692.694     | 5326.3296    |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOTI               | .12272707+10  | .27590142+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 254.66037     | 254.66037    |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | .12772757+10  | .28714300+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6287218     | 1.6287218    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 1147.0143     | 2528.7337    |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SWDOTN               | 502943.55     | 1108830.7    |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | WIF                  | 12.715697     | 28.533314    |
| INERT MASS REMAINING (KG,LBM)                                   | WIR                  | 39.701866     | 87.527633    |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | AUTOT                | 97.430356     | 151017.36    |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 4.1215407     | 251511.85    |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 3415.9031     | 7530.7773    |
| TOTAL GAS MASS (KG,LBM)                                         | WGTUT                | 401.79588     | 885.80830    |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1592953     | 1.1592953    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMN                  | 12.732678     | 28.071191    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1550.3503     | 5086.4510    |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | .98933081-01  | .98933081-01 |
| HEAD END PARAMETERS:                                            |                      |               |              |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | .11274067+09  | 163.51652    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | .53631517+11  | 76915.713    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AMH                  | 1.3476668     | 1623.8868    |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | .58691803-02  | .23107009    |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | 1.3883629     | 42.848935    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VPH                  | .23614620     | 14410.525    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.867686     | 3348231.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PKNT(1,3)            | 3316.6395     | 5969.9510    |
| CYLINDRICAL SECTION PARAMETERS:                                 |                      |               |              |
| AXIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABCYL                | 96.382689     | 149393.47    |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSLOT               | .00200000     | .00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 3.8834283     | 236981.33    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 280.86755     | 17139596.    |
| AFT END PARAMETERS:                                             |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | .11102553+09  | 161.02892    |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | .50621050+11  | 73419.626    |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAH                  | .00300000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | .58337787-02  | .22968420    |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | .58286392-02  | .22948068    |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | .74824400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PKNT(NI+2,3)         | 3316.1387     | 5968.9957    |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733    |
| NOZZLE PARAMETERS:                                              |                      |               |              |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.6016556     | 2482.5712    |
| EXPANSION RATIO                                                 | EPR                  | 6.7108776     | 6.7108776    |
| PRESSURE RATIO                                                  | PEPO                 | .23559165-01  | .23559165-01 |
| MISCELLANEOUS PARAMETERS:                                       |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | .37817250-01  | .37817250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLUPS               | 3.0000000     | 3.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| PASS     | PO     | P      | T       | U      | H    | LP     | AP       | WDOT    | DWDOT  | DW/DT  | RB   | TAU    | IN/SEC | IN.   | IN/SEC | TAUTO |
|----------|--------|--------|---------|--------|------|--------|----------|---------|--------|--------|------|--------|--------|-------|--------|-------|
| POSITION | PSIA   | PSIA   | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC |      |        |        |       |        |       |
| FORE     | 163.52 | 163.52 | 5969.95 | 8.50   | 0.02 | 449.54 | 16079.49 | 67.99   | 23.75  | -44.24 | 2305 | 42.849 | 0.000  | 0.000 | 0.000  | 0.000 |
| 15-000   | 163.52 | 163.51 | 5969.94 | 21.20  | 0.06 | 449.61 | 16099.06 | 169.78  | 98.67  | -3.12  | 2306 | 42.801 | 0.000  | 0.000 | 0.000  | 0.000 |
| 33-000   | 163.51 | 163.50 | 5969.91 | 33.89  | 0.10 | 450.07 | 16118.59 | 271.64  | 98.73  | -3.13  | 2306 | 42.797 | 0.000  | 0.000 | 0.000  | 0.000 |
| 73-000   | 163.51 | 163.49 | 5969.87 | 46.55  | 0.13 | 450.34 | 16138.08 | 373.58  | 98.83  | -3.13  | 2306 | 42.792 | 0.000  | 0.000 | 0.000  | 0.000 |
| 23-000   | 163.50 | 163.47 | 5969.82 | 59.19  | 0.17 | 450.61 | 16157.52 | 475.59  | 98.87  | -3.13  | 2306 | 42.788 | 0.000  | 0.000 | 0.000  | 0.000 |
| 73-000   | 163.49 | 163.45 | 5969.75 | 71.82  | 0.21 | 450.88 | 16176.92 | 577.67  | 98.94  | -3.14  | 2306 | 42.783 | 0.000  | 0.000 | 0.000  | 0.000 |
| 93-000   | 163.48 | 163.42 | 5969.68 | 84.44  | 0.24 | 451.14 | 16196.28 | 679.82  | 99.01  | -3.14  | 2307 | 42.778 | 0.000  | 0.000 | 0.000  | 0.000 |
| 103-000  | 163.46 | 163.39 | 5969.59 | 97.03  | 0.28 | 451.41 | 16215.59 | 782.04  | 99.07  | -3.15  | 2307 | 42.773 | 0.000  | 0.000 | 0.000  | 0.000 |
| 113-000  | 163.45 | 163.36 | 5969.51 | 106.93 | 0.31 | 451.62 | 16235.70 | 882.23  | 77.73  | -2.47  | 2307 | 42.768 | 0.000  | 0.000 | 0.000  | 0.000 |
| 113-000  | 163.45 | 163.31 | 5969.27 | 132.98 | 0.38 | 448.74 | 13051.82 | 862.23  | 0.00   | -0.00  | 2306 | 42.768 | 0.000  | 0.000 | 0.000  | 0.000 |
| 131-000  | 163.42 | 163.31 | 5969.42 | 117.86 | 0.34 | 460.06 | 14773.27 | 865.02  | 0.00   | -2.79  | 2306 | 42.768 | 0.000  | 0.000 | 0.000  | 0.000 |
| 143-000  | 163.39 | 163.29 | 5969.45 | 113.73 | 0.32 | 453.59 | 16169.38 | 913.39  | 45.92  | -2.45  | 2306 | 42.760 | 0.000  | 0.000 | 0.000  | 0.000 |
| 153-000  | 163.37 | 163.24 | 5969.34 | 126.26 | 0.36 | 451.29 | 16196.40 | 1015.52 | 98.98  | -3.14  | 2307 | 42.755 | 0.000  | 0.000 | 0.000  | 0.000 |
| 173-000  | 163.34 | 163.19 | 5969.21 | 138.79 | 0.40 | 451.95 | 16223.28 | 1117.83 | 99.16  | -3.15  | 2307 | 42.749 | 0.000  | 0.000 | 0.000  | 0.000 |
| 183-000  | 163.32 | 163.14 | 5969.07 | 151.31 | 0.43 | 452.56 | 16250.92 | 1220.33 | 99.33  | -3.16  | 2308 | 42.744 | 0.000  | 0.000 | 0.000  | 0.000 |
| 203-000  | 163.29 | 163.08 | 5968.91 | 163.83 | 0.47 | 453.12 | 16276.61 | 1322.99 | 99.49  | -3.17  | 2309 | 42.738 | 0.000  | 0.000 | 0.000  | 0.000 |
| 213-000  | 163.26 | 163.02 | 5968.75 | 176.09 | 0.50 | 453.63 | 16302.54 | 1423.79 | 97.61  | -3.18  | 2309 | 42.730 | 0.000  | 0.000 | 0.000  | 0.000 |
| 233-000  | 163.24 | 162.98 | 5968.65 | 183.42 | 0.52 | 340.41 | 16325.07 | 1484.79 | 57.63  | -3.37  | 2309 | 42.681 | 0.000  | 0.000 | 0.000  | 0.000 |
| 243-000  | 163.24 | 162.98 | 5968.64 | 183.95 | 0.53 | 113.47 | 16349.13 | 1491.24 | 3.25   | -3.20  | 2309 | 42.576 | 0.000  | 0.000 | 0.000  | 0.000 |
| 253-000  | 163.24 | 162.98 | 5968.64 | 183.98 | 0.53 | 0.00   | 16381.52 | 1494.43 | 0.00   | -3.20  | 2309 | 42.468 | 0.000  | 0.000 | 0.000  | 0.000 |
| 273-000  | 163.24 | 162.98 | 5968.64 | 184.08 | 0.53 | 0.00   | 16407.38 | 1497.64 | 0.00   | -3.20  | 2309 | 42.360 | 0.000  | 0.000 | 0.000  | 0.000 |
| 293-000  | 163.24 | 162.98 | 5968.64 | 184.19 | 0.53 | 0.00   | 16433.10 | 1500.86 | 0.00   | -3.22  | 2309 | 42.252 | 0.000  | 0.000 | 0.000  | 0.000 |
| 303-000  | 163.24 | 162.98 | 5968.64 | 184.30 | 0.53 | 0.00   | 16458.68 | 1504.09 | 0.00   | -3.23  | 2309 | 42.143 | 0.000  | 0.000 | 0.000  | 0.000 |
| 323-000  | 163.24 | 162.98 | 5968.64 | 184.41 | 0.53 | 0.00   | 16484.11 | 1507.32 | 0.00   | -3.24  | 2309 | 42.035 | 0.000  | 0.000 | 0.000  | 0.000 |
| 333-000  | 163.24 | 162.98 | 5968.63 | 184.53 | 0.53 | 0.00   | 16509.39 | 1510.57 | 0.00   | -3.25  | 2309 | 41.927 | 0.000  | 0.000 | 0.000  | 0.000 |
| 353-000  | 163.24 | 162.98 | 5968.63 | 184.64 | 0.53 | 0.00   | 16534.53 | 1513.82 | 0.00   | -3.25  | 2309 | 41.819 | 0.000  | 0.000 | 0.000  | 0.000 |
| 363-000  | 163.25 | 162.98 | 5968.63 | 184.78 | 0.53 | 0.00   | 16554.52 | 1517.09 | 0.00   | -3.26  | 2309 | 41.710 | 0.000  | 0.000 | 0.000  | 0.000 |
| 383-000  | 163.25 | 162.98 | 5968.63 | 184.88 | 0.53 | 0.00   | 16584.37 | 1520.36 | 0.00   | -3.27  | 2309 | 41.602 | 0.000  | 0.000 | 0.000  | 0.000 |
| 393-000  | 163.25 | 162.98 | 5968.63 | 185.00 | 0.53 | 0.00   | 16609.08 | 1523.64 | 0.00   | -3.28  | 2309 | 41.494 | 0.000  | 0.000 | 0.000  | 0.000 |
| 403-000  | 163.25 | 162.98 | 5968.63 | 185.04 | 0.53 | 0.00   | 16615.85 | 1524.55 | 0.00   | -3.28  | 2309 | 41.464 | 0.000  | 0.000 | 0.000  | 0.000 |
| 413-000  | 163.25 | 162.98 | 5968.63 | 187.09 | 0.53 | 0.00   | 16469.10 | 1527.82 | 0.00   | -3.27  | 2309 | 41.192 | 0.000  | 0.000 | 0.000  | 0.000 |
| 423-000  | 163.26 | 162.98 | 5968.58 | 188.32 | 0.54 | 0.00   | 16381.95 | 1529.77 | 0.00   | -1.95  | 2309 | 41.174 | 0.000  | 0.000 | 0.000  | 0.000 |
| 427-000  | 163.25 | 162.88 | 5968.09 | 219.43 | 0.63 | 0.00   | 14067.75 | 1529.77 | 0.00   | -0.00  | 2309 | 41.029 | 0.000  | 0.000 | 0.000  | 0.000 |
| 442-000  | 163.21 | 162.88 | 5968.28 | 207.93 | 0.59 | 0.00   | 14073.37 | 1532.62 | 0.00   | -2.85  | 2309 | 41.998 | 0.000  | 0.000 | 0.000  | 0.000 |
| 457-000  | 163.17 | 162.86 | 5968.41 | 199.50 | 0.57 | 315.50 | 15717.83 | 1553.77 | 18.15  | -3.00  | 2306 | 42.625 | 0.000  | 0.000 | 0.000  | 0.000 |
| 463-000  | 163.14 | 162.83 | 5968.41 | 199.57 | 0.57 | 449.45 | 16074.88 | 1589.38 | 34.34  | -1.26  | 2302 | 42.581 | 0.000  | 0.000 | 0.000  | 0.000 |
| 473-000  | 163.10 | 162.76 | 5968.21 | 212.20 | 0.61 | 449.76 | 16092.85 | 1691.05 | 98.56  | -3.11  | 2303 | 42.561 | 0.000  | 0.000 | 0.000  | 0.000 |
| 493-000  | 163.07 | 162.68 | 5967.99 | 224.83 | 0.64 | 450.55 | 16110.72 | 1792.86 | 98.69  | -3.12  | 2303 | 42.551 | 0.000  | 0.000 | 0.000  | 0.000 |
| 508-000  | 163.02 | 162.59 | 5967.77 | 237.47 | 0.68 | 451.13 | 16128.50 | 1894.82 | 98.83  | -3.13  | 2303 | 42.541 | 0.000  | 0.000 | 0.000  | 0.000 |
| 523-000  | 162.98 | 162.50 | 5967.53 | 250.12 | 0.71 | 451.71 | 16146.18 | 1996.93 | 98.97  | -3.14  | 2304 | 42.531 | 0.000  | 0.000 | 0.000  | 0.000 |
| 533-000  | 162.93 | 162.40 | 5967.28 | 262.79 | 0.75 | 452.29 | 16163.76 | 2099.19 | 99.12  | -3.14  | 2304 | 42.521 | 0.000  | 0.000 | 0.000  | 0.000 |
| 553-000  | 162.89 | 162.30 | 5967.01 | 275.47 | 0.79 | 452.87 | 16181.24 | 2201.81 | 99.26  | -3.15  | 2305 | 42.511 | 0.000  | 0.000 | 0.000  | 0.000 |
| 568-000  | 162.83 | 162.25 | 5966.73 | 288.17 | 0.82 | 453.45 | 16198.62 | 2304.17 | 99.41  | -3.16  | 2305 | 42.501 | 0.000  | 0.000 | 0.000  | 0.000 |
| 583-000  | 162.79 | 162.11 | 5966.50 | 299.41 | 0.85 | 453.89 | 16212.91 | 2386.94 | 79.67  | -3.17  | 2305 | 42.471 | 0.000  | 0.000 | 0.000  | 0.000 |
| 598-000  | 162.78 | 162.08 | 5966.42 | 301.89 | 0.86 | 427.00 | 16228.69 | 2416.73 | 26.59  | -3.20  | 2305 | 42.389 | 0.000  | 0.000 | 0.000  | 0.000 |
| 613-000  | 162.76 | 162.04 | 5966.42 | 301.88 | 0.86 | 0.00   | 16255.18 | 2419.09 | 0.00   | -3.17  | 2305 | 42.280 | 0.000  | 0.000 | 0.000  | 0.000 |



|         |        |        |         |        |      |     |          |         |     |       |       |        |       |      |
|---------|--------|--------|---------|--------|------|-----|----------|---------|-----|-------|-------|--------|-------|------|
| 628-204 | 162.76 | 162.08 | 5966.42 | 321.96 | .086 | .00 | 16267.17 | 2423.06 | .00 | -3.17 | .2305 | 42.172 | .0000 | .000 |
| 63-204  | 162.78 | 162.08 | 5966.42 | 302.05 | .086 | .00 | 16204.36 | 2426.24 | .00 | -3.18 | .2305 | 42.064 | .0000 | .000 |
| 65-204  | 162.78 | 162.08 | 5966.41 | 302.13 | .086 | .00 | 16305.85 | 2429.42 | .00 | -3.18 | .2305 | 41.955 | .0000 | .000 |
| 67-204  | 162.78 | 162.08 | 5966.41 | 302.22 | .086 | .00 | 16317.54 | 2432.61 | .00 | -3.19 | .2305 | 41.847 | .0000 | .000 |
| 68-204  | 162.78 | 162.08 | 5966.41 | 302.31 | .086 | .00 | 16334.14 | 2435.81 | .00 | -3.20 | .2305 | 41.738 | .0000 | .000 |
| 70-204  | 162.78 | 162.08 | 5966.41 | 302.40 | .086 | .00 | 16350.64 | 2439.02 | .00 | -3.20 | .2305 | 41.630 | .0000 | .000 |
| 73-204  | 162.78 | 162.08 | 5966.41 | 302.49 | .086 | .00 | 16367.04 | 2442.23 | .00 | -3.21 | .2305 | 41.522 | .0000 | .000 |
| 75-204  | 162.78 | 162.08 | 5966.40 | 302.55 | .086 | .00 | 16383.53 | 2445.44 | .00 | -1.71 | .2305 | 41.414 | .0000 | .000 |
| 77-204  | 162.78 | 162.08 | 5966.40 | 302.61 | .086 | .00 | 16399.93 | 2448.65 | .00 | -3.22 | .2305 | 41.306 | .0000 | .000 |
| 79-204  | 162.78 | 162.08 | 5966.40 | 302.68 | .087 | .00 | 16416.33 | 2451.86 | .00 | -1.10 | .2305 | 41.198 | .0000 | .000 |
| 81-204  | 162.78 | 162.08 | 5966.40 | 302.75 | .087 | .00 | 16432.73 | 2455.07 | .00 | -3.21 | .2304 | 41.090 | .0000 | .000 |
| 83-204  | 162.78 | 162.08 | 5966.40 | 302.82 | .087 | .00 | 16449.13 | 2458.28 | .00 | -3.21 | .2304 | 40.982 | .0000 | .000 |
| 85-204  | 162.78 | 162.08 | 5966.40 | 302.89 | .087 | .00 | 16465.53 | 2461.49 | .00 | -3.21 | .2304 | 40.874 | .0000 | .000 |
| 87-204  | 162.78 | 162.08 | 5966.40 | 302.96 | .087 | .00 | 16481.93 | 2464.70 | .00 | -3.21 | .2304 | 40.766 | .0000 | .000 |
| 89-204  | 162.78 | 162.08 | 5966.40 | 303.03 | .087 | .00 | 16498.33 | 2467.91 | .00 | -3.21 | .2304 | 40.658 | .0000 | .000 |
| 91-204  | 162.78 | 162.08 | 5966.40 | 303.10 | .087 | .00 | 16514.73 | 2471.12 | .00 | -3.21 | .2304 | 40.550 | .0000 | .000 |
| 93-204  | 162.78 | 162.08 | 5966.40 | 303.17 | .087 | .00 | 16531.13 | 2474.33 | .00 | -3.21 | .2304 | 40.442 | .0000 | .000 |
| 95-204  | 162.78 | 162.08 | 5966.40 | 303.24 | .087 | .00 | 16547.53 | 2477.54 | .00 | -3.21 | .2304 | 40.334 | .0000 | .000 |
| 97-204  | 162.78 | 162.08 | 5966.40 | 303.31 | .087 | .00 | 16563.93 | 2480.75 | .00 | -3.21 | .2304 | 40.226 | .0000 | .000 |
| 99-204  | 162.78 | 162.08 | 5966.40 | 303.38 | .087 | .00 | 16580.33 | 2483.96 | .00 | -3.21 | .2304 | 40.118 | .0000 | .000 |
| 101-204 | 162.78 | 162.08 | 5966.40 | 303.45 | .087 | .00 | 16596.73 | 2487.17 | .00 | -3.21 | .2304 | 40.010 | .0000 | .000 |
| 103-204 | 162.78 | 162.08 | 5966.40 | 303.52 | .087 | .00 | 16613.13 | 2490.38 | .00 | -3.21 | .2304 | 39.902 | .0000 | .000 |
| 105-204 | 162.78 | 162.08 | 5966.40 | 303.59 | .087 | .00 | 16629.53 | 2493.59 | .00 | -3.21 | .2304 | 39.794 | .0000 | .000 |
| 107-204 | 162.78 | 162.08 | 5966.40 | 303.66 | .087 | .00 | 16645.93 | 2496.80 | .00 | -3.21 | .2304 | 39.686 | .0000 | .000 |
| 109-204 | 162.78 | 162.08 | 5966.40 | 303.73 | .087 | .00 | 16662.33 | 2499.99 | .00 | -3.21 | .2304 | 39.578 | .0000 | .000 |
| 111-204 | 162.78 | 162.08 | 5966.40 | 303.80 | .087 | .00 | 16678.73 | 2503.20 | .00 | -3.21 | .2304 | 39.470 | .0000 | .000 |
| 113-204 | 162.78 | 162.08 | 5966.40 | 303.87 | .087 | .00 | 16695.13 | 2506.41 | .00 | -3.21 | .2304 | 39.362 | .0000 | .000 |
| 115-204 | 162.78 | 162.08 | 5966.40 | 303.94 | .087 | .00 | 16711.53 | 2509.62 | .00 | -3.21 | .2304 | 39.254 | .0000 | .000 |
| 117-204 | 162.78 | 162.08 | 5966.40 | 304.01 | .087 | .00 | 16727.93 | 2512.83 | .00 | -3.21 | .2304 | 39.146 | .0000 | .000 |
| 119-204 | 162.78 | 162.08 | 5966.40 | 304.08 | .087 | .00 | 16744.33 | 2516.04 | .00 | -3.21 | .2304 | 39.038 | .0000 | .000 |
| 121-204 | 162.78 | 162.08 | 5966.40 | 304.15 | .087 | .00 | 16760.73 | 2519.25 | .00 | -3.21 | .2304 | 38.930 | .0000 | .000 |
| 123-204 | 162.78 | 162.08 | 5966.40 | 304.22 | .087 | .00 | 16777.13 | 2522.46 | .00 | -3.21 | .2304 | 38.822 | .0000 | .000 |
| 125-204 | 162.78 | 162.08 | 5966.40 | 304.29 | .087 | .00 | 16793.53 | 2525.67 | .00 | -3.21 | .2304 | 38.714 | .0000 | .000 |
| 127-204 | 162.78 | 162.08 | 5966.40 | 304.36 | .087 | .00 | 16809.93 | 2528.88 | .00 | -3.21 | .2304 | 38.606 | .0000 | .000 |
| 129-204 | 162.78 | 162.08 | 5966.40 | 304.43 | .087 | .00 | 16826.33 | 2532.09 | .00 | -3.21 | .2304 | 38.498 | .0000 | .000 |
| 131-204 | 162.78 | 162.08 | 5966.40 | 304.50 | .087 | .00 | 16842.73 | 2535.30 | .00 | -3.21 | .2304 | 38.390 | .0000 | .000 |
| 133-204 | 162.78 | 162.08 | 5966.40 | 304.57 | .087 | .00 | 16859.13 | 2538.51 | .00 | -3.21 | .2304 | 38.282 | .0000 | .000 |
| 135-204 | 162.78 | 162.08 | 5966.40 | 304.64 | .087 | .00 | 16875.53 | 2541.72 | .00 | -3.21 | .2304 | 38.174 | .0000 | .000 |
| 137-204 | 162.78 | 162.08 | 5966.40 | 304.71 | .087 | .00 | 16891.93 | 2544.93 | .00 | -3.21 | .2304 | 38.066 | .0000 | .000 |
| 139-204 | 162.78 | 162.08 | 5966.40 | 304.78 | .087 | .00 | 16908.33 | 2548.14 | .00 | -3.21 | .2304 | 37.958 | .0000 | .000 |
| 141-204 | 162.78 | 162.08 | 5966.40 | 304.85 | .087 | .00 | 16924.73 | 2551.35 | .00 | -3.21 | .2304 | 37.850 | .0000 | .000 |
| 143-204 | 162.78 | 162.08 | 5966.40 | 304.92 | .087 | .00 | 16941.13 | 2554.56 | .00 | -3.21 | .2304 | 37.742 | .0000 | .000 |
| 145-204 | 162.78 | 162.08 | 5966.40 | 304.99 | .087 | .00 | 16957.53 | 2557.77 | .00 | -3.21 | .2304 | 37.634 | .0000 | .000 |
| 147-204 | 162.78 | 162.08 | 5966.40 | 305.06 | .087 | .00 | 16973.93 | 2560.98 | .00 | -3.21 | .2304 | 37.526 | .0000 | .000 |
| 149-204 | 162.78 | 162.08 | 5966.40 | 305.13 | .087 | .00 | 16990.33 | 2564.19 | .00 | -3.21 | .2304 | 37.418 | .0000 | .000 |
| 151-204 | 162.78 | 162.08 | 5966.40 | 305.20 | .087 | .00 | 17006.73 | 2567.40 | .00 | -3.21 | .2304 | 37.310 | .0000 | .000 |
| 153-204 | 162.78 | 162.08 | 5966.40 | 305.27 | .087 | .00 | 17023.13 | 2570.61 | .00 | -3.21 | .2304 | 37.202 | .0000 | .000 |
| 155-204 | 162.78 | 162.08 | 5966.40 | 305.34 | .087 | .00 | 17039.53 | 2573.82 | .00 | -3.21 | .2304 | 37.094 | .0000 | .000 |
| 157-204 | 162.78 | 162.08 | 5966.40 | 305.41 | .087 | .00 | 17055.93 | 2577.03 | .00 | -3.21 | .2304 | 36.986 | .0000 | .000 |
| 159-204 | 162.78 | 162.08 | 5966.40 | 305.48 | .087 | .00 | 17072.33 | 2580.24 | .00 | -3.21 | .2304 | 36.878 | .0000 | .000 |
| 161-204 | 162.78 | 162.08 | 5966.40 | 305.55 | .087 | .00 | 17088.73 | 2583.45 | .00 | -3.21 | .2304 | 36.770 | .0000 | .000 |
| 163-204 | 162.78 | 162.08 | 5966.40 | 305.62 | .087 | .00 | 17105.13 | 2586.66 | .00 | -3.21 | .2304 | 36.662 | .0000 | .000 |
| 165-204 | 162.78 | 162.08 | 5966.40 | 305.69 | .087 | .00 | 17121.53 | 2589.87 | .00 | -3.21 | .2304 | 36.554 | .0000 | .000 |
| 167-204 | 162.78 | 162.08 | 5966.40 | 305.76 | .087 | .00 | 17137.93 | 2593.08 | .00 | -3.21 | .2304 | 36.446 | .0000 | .000 |
| 169-204 | 162.78 | 162.08 | 5966.40 | 305.83 | .087 | .00 | 17154.33 | 2596.29 | .00 | -3.21 | .2304 | 36.338 | .0000 | .000 |
| 171-204 | 162.78 | 162.08 | 5966.40 | 305.90 | .087 | .00 | 17170.73 | 2599.50 | .00 | -3.21 | .2304 | 36.230 | .0000 | .000 |
| 173-204 | 162.78 | 162.08 | 5966.40 | 305.97 | .087 | .00 | 17187.13 | 2602.71 | .00 | -3.21 | .2304 | 36.122 | .0000 | .000 |
| 175-204 | 162.78 | 162.08 | 5966.40 | 306.04 | .087 | .00 | 17203.53 | 2605.92 | .00 | -3.21 | .2304 | 36.014 | .0000 | .000 |
| 177-204 | 162.78 | 162.08 | 5966.40 | 306.11 | .087 | .00 | 17219.93 | 2609.13 | .00 | -3.21 | .2304 | 35.906 | .0000 | .000 |
| 179-204 | 162.78 | 162.08 | 5966.40 | 306.18 | .087 | .00 | 17236.33 | 2612.34 | .00 | -3.21 | .2304 | 35.798 | .0000 | .000 |
| 181-204 | 162.78 | 162.08 | 5966.40 | 306.25 | .087 | .00 | 17252.73 | 2615.55 | .00 | -3.21 | .2304 | 35.690 | .0000 | .000 |
| 183-204 | 162.78 | 162.08 | 5966.40 | 306.32 | .087 | .00 | 17269.13 | 2618.76 | .00 | -3.21 | .2304 | 35.582 | .0000 | .000 |
| 185-204 | 162.78 | 162.08 | 5966.40 | 306.39 | .087 | .00 | 17285.53 | 2621.97 | .00 | -3.21 | .2304 | 35.474 | .0000 | .000 |
| 187-204 | 162.78 | 162.08 | 5966.40 | 306.46 | .087 | .00 | 17301.93 | 2625.18 | .00 | -3.21 | .2304 | 35.366 | .0000 | .000 |
| 189-204 | 162.78 | 162.08 | 5966.40 | 306.53 | .087 | .00 | 17318.33 | 2628.39 | .00 | -3.21 | .2304 | 35.258 | .0000 | .000 |
| 191-204 | 162.78 | 162.08 | 5966.40 | 306.60 | .087 | .00 | 17334.73 | 2631.60 | .00 | -3.21 | .2304 | 35.150 | .0000 | .000 |
| 193-204 | 162.78 | 162.08 | 5966.40 | 306.67 | .087 | .00 | 17351.13 | 2634.81 | .00 | -3.21 | .2304 | 35.042 | .0000 | .000 |
| 195-204 | 162.78 | 162.08 | 5966.40 | 306.74 | .087 | .00 | 17367.53 | 2638.02 | .00 | -3.21 | .2304 | 34.934 | .0000 | .000 |
| 197-204 | 162.78 | 162.08 | 5966.40 | 306.81 | .087 | .00 | 17383.93 | 2641.23 | .00 | -3.21 | .2304 | 34.826 | .0000 | .000 |
| 199-204 | 162.78 | 162.08 | 5966.40 | 306.88 | .087 | .00 | 17400.33 | 2644.44 | .00 | -3.21 | .2304 | 34.718 | .0000 | .000 |
| 201-204 | 162.78 | 162.08 | 5966.40 | 306.95 | .087 | .00 | 17416.73 | 2647.65 | .00 | -3.21 | .2304 | 34.610 | .0000 | .000 |
| 203-204 | 162.78 | 162.08 | 5966.40 | 307.02 | .087 | .00 | 17433.13 | 2650.86 | .00 | -3.21 | .2304 | 34.502 | .0000 | .000 |
| 205-204 | 162.78 | 162.08 | 5966.40 | 307.09 | .087 | .00 | 17449.53 | 2654.07 | .00 | -3.21 | .2304 | 34.394 | .0000 | .000 |
| 207-204 | 162.78 | 162.08 | 5966.40 | 307.16 | .087 | .00 | 17465.93 | 2657.28 | .00 | -3.21 | .2304 | 34.286 | .0000 | .000 |
| 209-204 | 162.78 | 162.08 | 5966.40 | 307.23 | .087 | .00 | 17482.33 | 2660.49 | .00 | -3.21 | .2304 | 34.178 | .0000 | .000 |
| 211-204 | 162.78 | 162.08 | 5966.40 | 307.30 | .087 | .00 | 17498.73 | 2663.70 | .00 | -3.21 | .2304 | 34.070 | .0000 | .000 |
| 213-204 | 162.78 | 162.08 | 5966.40 | 307.37 | .087 | .00 | 17515.13 | 2666.91 | .00 | -3.21 | .2304 | 33.962 | .0000 | .000 |
| 215-204 | 162.78 | 162.08 | 5966.40 | 307.44 | .087 | .00 | 17531.53 | 2670.12 | .00 | -3.21 | .2304 | 33.854 | .0000 | .000 |
| 217-204 | 162.78 | 162.08 | 5966.40 | 307.51 | .087 | .00 | 17547.93 | 2673.33 | .00 | -3.21 | .2304 | 33.746 | .0000 | .000 |
| 219-204 | 162.78 | 162.08 | 5966.40 | 307.58 | .087 | .00 | 17564.33 | 2676.54 | .00 | -3.   |       |        |       |      |

| SLOT<br>INTERFACE<br>LOCATION<br>IN.    | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | #SLOT<br>LB/SEC |
|-----------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD                                 | 1.1676+02  | 1.6345+02 | 1.6336+02   | 5.9695+03   | 1.0541+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 0.6223+02       |
| AFT                                     | 1.1677+02  | 1.6340+02 | 1.6331+02   | 5.9693+03   | 1.0544+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 0.6223+02       |
| GAS BUILDUP IN SLOT, DW/DI = -2.1767-03 |            |           |             |             |               |                 |               |              |                     |                 |

|                                         |           |           |           |           |           |           |        |        |        |           |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD                                 | 4.2705+02 | 1.6326+02 | 1.6298+02 | 5.9686+03 | 1.8831+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 1.5298+03 |
| AFT                                     | 4.2736+02 | 1.6315+02 | 1.6288+02 | 5.9681+03 | 1.8842+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 1.5298+03 |
| GAS BUILDUP IN SLOT, DW/DI = -2.1611-03 |           |           |           |           |           |           |        |        |        |           |

|                                         |           |           |           |           |           |           |        |        |        |           |
|-----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FORWARD                                 | 7.4634+02 | 1.6278+02 | 1.6208+02 | 5.9664+03 | 3.0295+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 2.4483+03 |
| AFT                                     | 7.4635+02 | 1.6255+02 | 1.6185+02 | 5.9653+03 | 3.0333+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 2.4483+03 |
| GAS BUILDUP IN SLOT, DW/DI = -2.1464-03 |           |           |           |           |           |           |        |        |        |           |

|                                       |          |              |        |        |         |          |         |        |        |      |        |        |        |
|---------------------------------------|----------|--------------|--------|--------|---------|----------|---------|--------|--------|------|--------|--------|--------|
| WEB BURNOUT INCREMENT LOCATION =      | 203.9190 | SECTOR NO. = | 2      | TAU =  | 42.9310 | TAUWDP = | 42.9010 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 203.9190 | SECTOR NO. = | 3      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 218.9190 | SECTOR NO. = | 1      | TAU =  | 42.7928 | TAUWDP = | 42.7928 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 218.9190 | SECTOR NO. = | 4      | TAU =  | 42.7928 | TAUWDP = | 42.7928 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 218.9190 | SECTOR NO. = | 5      | TAU =  | 42.7928 | TAUWDP = | 42.7928 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 218.9190 | SECTOR NO. = | 7      | TAU =  | 42.7928 | TAUWDP = | 42.7928 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 218.9190 | SECTOR NO. = | 8      | TAU =  | 42.7928 | TAUWDP = | 42.7928 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 233.9190 | SECTOR NO. = | 6      | TAU =  | 42.6845 | TAUWDP = | 42.6845 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 233.9190 | SECTOR NO. = | 7      | TAU =  | 42.6845 | TAUWDP = | 42.6845 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 568.2040 | SECTOR NO. = | 1      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 568.2040 | SECTOR NO. = | 2      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 568.2040 | SECTOR NO. = | 3      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 568.2040 | SECTOR NO. = | 4      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 583.2040 | SECTOR NO. = | 5      | TAU =  | 42.4970 | TAUWDP = | 42.4970 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 583.2040 | SECTOR NO. = | 6      | TAU =  | 42.4970 | TAUWDP = | 42.4970 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 583.2040 | SECTOR NO. = | 7      | TAU =  | 42.4970 | TAUWDP = | 42.4970 | TIME = | 115.00 |      |        |        |        |
| WEB BURNOUT INCREMENT LOCATION =      | 583.2040 | SECTOR NO. = | 8      | TAU =  | 42.4970 | TAUWDP = | 42.4970 | TIME = | 115.00 |      |        |        |        |
| *PARTON* TIME=115.50 IS=2 ZCALC( 16)= | 203.92   | ZCALC( 15)=  | 188.92 | AINCW= | 200.19  | AINCHI=  | 188.92  | DELZ=  | 11.273 | ALP= | 453.93 | ALPHI= | 453.57 |
| *PARTON* TIME=115.50 IS=3 ZCALC( 16)= | 203.92   | ZCALC( 15)=  | 188.92 | AINCW= | 201.39  | AINCHI=  | 188.92  | DELZ=  | 12.468 | ALP= | 453.93 | ALPHI= | 453.53 |
| *PARTON* TIME=115.50 IS=1 ZCALC( 17)= | 218.92   | ZCALC( 16)=  | 203.92 | AINCW= | 206.62  | AINCHI=  | 203.92  | DELZ=  | 2.700  | ALP= | 453.92 | ALPHI= | 453.87 |
| *PARTON* TIME=115.50 IS=4 ZCALC( 17)= | 218.92   | ZCALC( 16)=  | 203.92 | AINCW= | 208.43  | AINCHI=  | 203.92  | DELZ=  | 4.483  | ALP= | 453.92 | ALPHI= | 453.81 |
| *PARTON* TIME=115.50 IS=5 ZCALC( 17)= | 218.92   | ZCALC( 16)=  | 203.92 | AINCW= | 216.74  | AINCHI=  | 203.92  | DELZ=  | 12.819 | ALP= | 453.91 | ALPHI= | 453.52 |
| *PARTON* TIME=115.50 IS=6 ZCALC( 17)= | 218.92   | ZCALC( 16)=  | 203.92 | AINCW= | 219.23  | AINCHI=  | 203.92  | DELZ=  | 15.314 | ALP= | 453.90 | ALPHI= | 453.43 |
| *PARTON* TIME=115.50 IS=7 ZCALC( 17)= | 218.92   | ZCALC( 16)=  | 203.92 | AINCW= | 218.75  | AINCHI=  | 203.92  | DELZ=  | 14.826 | ALP= | 453.90 | ALPHI= | 453.45 |
| *PARTON* TIME=115.50 IS=8 ZCALC( 17)= | 218.92   | ZCALC( 16)=  | 203.92 | AINCW= | 215.88  | AINCHI=  | 203.92  | DELZ=  | 11.964 | ALP= | 453.91 | ALPHI= | 453.55 |
| *PARTON* TIME=115.50 IS=1 ZCALC( 35)= | 457.06   | ZCALC( 34)=  | 442.06 | AINCW= | 457.06  | AINCHI=  | 454.09  | DELZ=  | 2.968  | ALP= | 315.11 | ALPHI= | 225.27 |
| *PARTON* TIME=115.50 IS=2 ZCALC( 35)= | 457.06   | ZCALC( 34)=  | 442.06 | AINCW= | 457.06  | AINCHI=  | 454.75  | DELZ=  | 2.311  | ALP= | 315.00 | ALPHI= | 241.77 |
| *PARTON* TIME=115.50 IS=3 ZCALC( 35)= | 457.06   | ZCALC( 34)=  | 442.06 | AINCW= | 457.06  | AINCHI=  | 454.63  | DELZ=  | 2.434  | ALP= | 315.02 | ALPHI= | 238.66 |
| *PARTON* TIME=115.50 IS=4 ZCALC( 35)= | 457.06   | ZCALC( 34)=  | 442.06 | AINCW= | 457.06  | AINCHI=  | 453.91  | DELZ=  | 3.150  | ALP= | 315.15 | ALPHI= | 220.89 |
| *PARTON* TIME=115.50 IS=5 ZCALC( 35)= | 457.06   | ZCALC( 34)=  | 442.06 | AINCW= | 457.06  | AINCHI=  | 453.07  | DELZ=  | 3.995  | ALP= | 315.30 | ALPHI= | 199.44 |
| *PARTON* TIME=115.50 IS=6 ZCALC( 35)= | 457.06   | ZCALC( 34)=  | 442.06 | AINCW= | 457.06  | AINCHI=  | 452.81  | DELZ=  | 4.249  | ALP= | 315.34 | ALPHI= | 193.04 |

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OF POOR QUALITY



|            |                    |      |             |          |             |        |        |         |          |         |        |        |            |              |
|------------|--------------------|------|-------------|----------|-------------|--------|--------|---------|----------|---------|--------|--------|------------|--------------|
| PARTIB     | TIME=115.50        | 15=7 | ZCALC( 35)= | 457.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 4.200  | ALP=315.33 | ALPHI=194.30 |
| PARTIB     | TIME=115.50        | 15=8 | ZCALC( 35)= | 457.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 3.908  | ALP=315.26 | ALPHI=201.63 |
| PARTIB     | TIME=115.50        | 15=1 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 562.17  | AINCW=   | 562.17  | DELZ=  | 8.969  | ALP=454.06 | ALPHI=453.78 |
| PARTIB     | TIME=115.50        | 15=2 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 555.48  | AINCW=   | 555.48  | DELZ=  | 2.274  | ALP=454.08 | ALPHI=454.05 |
| PARTIB     | TIME=115.50        | 15=3 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 556.72  | AINCW=   | 556.72  | DELZ=  | 3.510  | ALP=454.08 | ALPHI=454.00 |
| PARTIB     | TIME=115.50        | 15=4 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 564.72  | AINCW=   | 564.72  | DELZ=  | 10.821 | ALP=454.06 | ALPHI=453.70 |
| PARTIB     | TIME=115.50        | 15=5 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 572.70  | AINCW=   | 572.70  | DELZ=  | 4.492  | ALP=454.04 | ALPHI=453.93 |
| PARTIB     | TIME=115.50        | 15=6 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 575.28  | AINCW=   | 575.28  | DELZ=  | 7.080  | ALP=454.03 | ALPHI=453.84 |
| PARTIB     | TIME=115.50        | 15=7 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 574.78  | AINCW=   | 574.78  | DELZ=  | 6.573  | ALP=454.04 | ALPHI=453.96 |
| PARTIB     | TIME=115.50        | 15=8 | ZCALC( 43)= | 568.20   | ZCALC( 42)= | 553.20 | AINCW= | 571.80  | AINCW=   | 571.80  | DELZ=  | 3.600  | ALP=453.93 | ALPHI=453.57 |
| PARTIB     | TIME=115.50        | 15=2 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 203.92  | AINCW=   | 203.92  | DELZ=  | 12.460 | ALP=453.92 | ALPHI=453.87 |
| PARTIB     | TIME=115.50        | 15=3 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 206.62  | AINCW=   | 206.62  | DELZ=  | 2.700  | ALP=453.92 | ALPHI=453.81 |
| PARTIB     | TIME=115.50        | 15=4 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 206.62  | AINCW=   | 206.62  | DELZ=  | 4.483  | ALP=453.92 | ALPHI=453.81 |
| PARTIB     | TIME=115.50        | 15=5 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 216.74  | AINCW=   | 216.74  | DELZ=  | 12.819 | ALP=453.91 | ALPHI=453.52 |
| PARTIB     | TIME=115.50        | 15=6 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 219.23  | AINCW=   | 219.23  | DELZ=  | 15.314 | ALP=453.90 | ALPHI=453.42 |
| PARTIB     | TIME=115.50        | 15=7 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 218.75  | AINCW=   | 218.75  | DELZ=  | 14.826 | ALP=453.90 | ALPHI=453.45 |
| PARTIB     | TIME=115.50        | 15=8 | ZCALC( 15)= | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 215.88  | AINCW=   | 215.88  | DELZ=  | 13.964 | ALP=453.91 | ALPHI=453.55 |
| PARTIB     | TIME=115.50        | 15=1 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 2.968  | ALP=315.11 | ALPHI=225.27 |
| PARTIB     | TIME=115.50        | 15=2 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 2.311  | ALP=315.00 | ALPHI=241.77 |
| PARTIB     | TIME=115.50        | 15=3 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 2.434  | ALP=315.02 | ALPHI=238.68 |
| PARTIB     | TIME=115.50        | 15=4 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 3.150  | ALP=315.15 | ALPHI=220.69 |
| PARTIB     | TIME=115.50        | 15=5 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 3.995  | ALP=315.30 | ALPHI=199.44 |
| PARTIB     | TIME=115.50        | 15=6 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 4.249  | ALP=315.34 | ALPHI=199.06 |
| PARTIB     | TIME=115.50        | 15=7 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 4.200  | ALP=315.33 | ALPHI=194.30 |
| PARTIB     | TIME=115.50        | 15=8 | ZCALC( 34)= | 442.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCW=   | 457.06  | DELZ=  | 3.908  | ALP=315.28 | ALPHI=201.63 |
| PARTIB     | TIME=115.50        | 15=1 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 562.17  | AINCW=   | 562.17  | DELZ=  | 8.969  | ALP=454.06 | ALPHI=453.78 |
| PARTIB     | TIME=115.50        | 15=2 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 555.48  | AINCW=   | 555.48  | DELZ=  | 2.274  | ALP=454.08 | ALPHI=454.05 |
| PARTIB     | TIME=115.50        | 15=3 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 556.72  | AINCW=   | 556.72  | DELZ=  | 3.510  | ALP=454.08 | ALPHI=454.00 |
| PARTIB     | TIME=115.50        | 15=4 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 564.72  | AINCW=   | 564.72  | DELZ=  | 10.821 | ALP=454.06 | ALPHI=453.70 |
| PARTIB     | TIME=115.50        | 15=5 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 572.70  | AINCW=   | 572.70  | DELZ=  | 4.492  | ALP=454.04 | ALPHI=453.93 |
| PARTIB     | TIME=115.50        | 15=6 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 575.28  | AINCW=   | 575.28  | DELZ=  | 7.080  | ALP=454.03 | ALPHI=453.84 |
| PARTIB     | TIME=115.50        | 15=7 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 574.78  | AINCW=   | 574.78  | DELZ=  | 6.573  | ALP=454.04 | ALPHI=453.96 |
| PARTIB     | TIME=115.50        | 15=8 | ZCALC( 42)= | 553.20   | ZCALC( 42)= | 553.20 | AINCW= | 571.80  | AINCW=   | 571.80  | DELZ=  | 3.600  | ALP=453.93 | ALPHI=453.57 |
| EB BURROUT | INCREMENT LOCATION |      |             | 188.9190 | SECTOR NO.  | 2      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 188.9190 | SECTOR NO.  | 3      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 1      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 4      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 5      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 6      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 7      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 8      | TAU =  | 42.9010 | TAUWDP = | 42.9010 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.9190 | SECTOR NO.  | 6      | TAU =  | 42.7928 | TAUWDP = | 42.7928 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 1      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 2      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 3      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 4      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 5      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 6      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 7      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 553.2040 | SECTOR NO.  | 8      | TAU =  | 42.6054 | TAUWDP = | 42.6054 | TIME = | 115.50 |            |              |
| EB BURROUT | INCREMENT LOCATION |      |             | 188.92   | ZCALC( 15)= | 173.92 | AINCW= | 184.20  | AINCW=   | 173.92  | DELZ=  | 10.279 | ALP=453.95 | ALPHI=453.62 |
| EB BURROUT | INCREMENT LOCATION |      |             | 188.92   | ZCALC( 15)= | 173.92 | AINCW= | 185.39  | AINCW=   | 173.92  | DELZ=  | 11.474 | ALP=453.95 | ALPHI=453.57 |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 193.63  | AINCW=   | 188.92  | DELZ=  | 1.711  | ALP=453.94 | ALPHI=453.86 |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 192.42  | AINCW=   | 188.92  | DELZ=  | 3.498  | ALP=453.94 | ALPHI=453.86 |
| EB BURROUT | INCREMENT LOCATION |      |             | 203.92   | ZCALC( 15)= | 188.92 | AINCW= | 203.70  | AINCW=   | 188.92  | DELZ=  | 11.043 | ALP=453.93 | ALPHI=453.55 |



•PARTBN• TIME=116.00 15=6 ZCALC( 35)= 457.06 ZCALC( 34)= 442.06 AINCW= 457.06 AINCHI= 454.44 DELZ= 2.618 ALP=315.05 ALPHI=234.05  
•PARTBN• TIME=116.00 15=7 ZCALC( 35)= 457.06 ZCALC( 34)= 442.06 AINCW= 457.06 AINCHI= 454.49 DELZ= 2.569 ALP=315.04 ALPHI=235.29  
•PARTBN• TIME=116.00 15=8 ZCALC( 35)= 457.06 ZCALC( 34)= 442.06 AINCW= 457.06 AINCHI= 454.78 DELZ= 2.276 ALP=314.99 ALPHI=242.65  
•PARTBN• TIME=116.00 15=2 ZCALC( 41)= 538.20 ZCALC( 40)= 523.20 AINCW= 538.80 AINCHI= 523.20 DELZ=15.601 ALP=454.12 ALPHI=453.57  
•PARTBN• TIME=116.00 15=1 ZCALC( 42)= 553.20 ZCALC( 41)= 538.20 AINCW= 545.50 AINCHI= 538.20 DELZ= 7.299 ALP=454.10 ALPHI=453.88  
•PARTBN• TIME=116.00 15=3 ZCALC( 42)= 553.20 ZCALC( 41)= 538.20 AINCW= 545.50 AINCHI= 538.20 DELZ= 1.840 ALP=454.12 ALPHI=454.11  
•PARTBN• TIME=116.00 15=4 ZCALC( 42)= 553.20 ZCALC( 41)= 538.20 AINCW= 547.36 AINCHI= 538.20 DELZ= 9.155 ALP=454.10 ALPHI=453.81  
•PARTBN• TIME=116.00 15=5 ZCALC( 43)= 568.20 ZCALC( 42)= 553.20 AINCW= 556.04 AINCHI= 553.20 DELZ= 2.837 ALP=454.08 ALPHI=454.03  
•PARTBN• TIME=116.00 15=6 ZCALC( 43)= 568.20 ZCALC( 42)= 553.20 AINCW= 558.64 AINCHI= 553.20 DELZ= 5.433 ALP=454.07 ALPHI=453.92  
•PARTBN• TIME=116.00 15=7 ZCALC( 43)= 568.20 ZCALC( 42)= 553.20 AINCW= 558.13 AINCHI= 553.20 DELZ= 4.925 ALP=454.07 ALPHI=453.94  
•PARTBN• TIME=116.00 15=8 ZCALC( 43)= 568.20 ZCALC( 42)= 553.20 AINCW= 555.15 AINCHI= 553.20 DELZ= 1.945 ALP=454.08 ALPHI=454.07

IGNITION TIME, TIME (S)

116.00690

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 2389956.4     | 469840.89    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 2395588.7     | 471107.07    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 17121.258     | 3849.0007    |
| DELIVERED TOTAL IMPULSE (N.S,LBF.S)        | SRMOTI               | .12297498+10  | .27645876+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 254.46385     | 254.46385    |
| VACUUM TOTAL IMPULSE (N.S,LBF.S)           | SRMVTI               | .12797608+10  | .28770167+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6287018     | 1.6287018    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 830.37907     | 1831.1134    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 533.28.57     | 1110972.3    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | HIF                  | 9.1808281     | 20.257898    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 29.674767     | 65.421662    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 77.159539     | 119597.51    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 3.4763586     | 212140.42    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 2547.8814     | 5617.1169    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 293.62129     | 640.71028    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1592524     | 1.1592524    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.718926     | 28.040433    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1549.1493     | 5082.5098    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .96497611-01  | .98497611-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 81553743.     | 118.28370    |
| PRESSURE INTEGRAL (N.S/M**2,LBF.S/IN**2)   | SPHDT                | .53128241+11  | 77056.000    |
| BURN AREA (M**2,IN**2)                     | AHH                  | .82621849     | 1280.6381    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .52445331-02  | .20647768    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.0940758     | 43.073850    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .23082562     | 14085.539    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.873311     | 3348556.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3306.9644     | 5952.5359    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RAJIAL BURN AREA (M**2,IN**2)              | ABCYL                | 76.333313     | 118316.87    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 3.2435718     | 197934.89    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 280.24741     | 17101746.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 80320399.     | 116.49489    |
| PRESSURE INTEGRAL (N.S/M**2,LBF.S/IN**2)   | SPONDT               | .50716306+11  | 73557.783    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .52090223-02  | .20507962    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .52044325-02  | .20489774    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3306.5835     | 5951.8502    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.6019118     | 2482.9683    |
| EXPANSION RATIO                            | EPR                  | 6.7098044     | 6.7098044    |
| PRESSURE RATIO                             | PEPO                 | .23566566-01  | .23566566-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 3.0000000     | 3.0000000    |

ORIGINAL PAGE IS  
OF POOR QUALITY

INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGLIONS | PO     | P      | T       | U      | M    | LP     | INCHES   | SQ. IN. | AP | WDOT    | LB/SEC | DWDOT | DW/DT  | RB     | TAU    | RNTO   | TAUTO |
|------------------------------|--------|--------|---------|--------|------|--------|----------|---------|----|---------|--------|-------|--------|--------|--------|--------|-------|
|                              | PSIA   | PSIA   | DEG. R  | FT/SEC |      |        |          |         |    |         |        |       |        | IN/SEC | IN.    | IN/SEC | IN.   |
| FUNE                         | 118.28 | 118.28 | 5952.54 | 9.11   | .003 | 450.94 | 16180.52 | 53.11   |    | 53.11   | 16.74  | 16.74 | -36.37 | .2060  | 43.074 | .0000  | .0000 |
| 15.000                       | 118.28 | 118.28 | 5952.52 | 24.68  | .007 | 451.21 | 16200.16 | 144.12  |    | 144.12  | 88.42  | 88.42 | -2.59  | .2060  | 43.025 | .0000  | .0000 |
| 30.000                       | 118.28 | 118.27 | 5952.48 | 40.24  | .012 | 451.48 | 16219.76 | 235.21  |    | 235.21  | 88.49  | 88.49 | -2.60  | .2060  | 43.021 | .0000  | .0000 |
| 45.000                       | 118.28 | 118.26 | 5952.42 | 55.77  | .016 | 451.75 | 16239.32 | 326.36  |    | 326.36  | 88.55  | 88.55 | -2.60  | .2060  | 43.017 | .0000  | .0000 |
| 60.000                       | 118.27 | 118.24 | 5952.34 | 71.28  | .020 | 452.02 | 16258.83 | 417.58  |    | 417.58  | 88.61  | 88.61 | -2.60  | .2061  | 43.012 | .0000  | .0000 |
| 75.000                       | 118.26 | 118.21 | 5952.25 | 86.77  | .025 | 452.28 | 16278.30 | 508.86  |    | 508.86  | 88.68  | 88.68 | -2.61  | .2061  | 43.007 | .0000  | .0000 |
| 90.000                       | 118.24 | 118.19 | 5952.13 | 102.25 | .029 | 452.55 | 16297.72 | 600.21  |    | 600.21  | 88.74  | 88.74 | -2.61  | .2061  | 43.002 | .0000  | .0000 |
| 105.000                      | 118.23 | 118.15 | 5952.00 | 117.72 | .034 | 452.82 | 16317.10 | 691.62  |    | 691.62  | 88.80  | 88.80 | -2.61  | .2061  | 42.997 | .0000  | .0000 |
| 119.761                      | 118.21 | 118.12 | 5951.89 | 129.84 | .037 | 453.03 | 16332.27 | 783.34  |    | 783.34  | 69.67  | 69.67 | -2.65  | .2061  | 42.992 | .0000  | .0000 |
| 115.771                      | 118.21 | 118.06 | 5951.50 | 163.72 | .047 | 447.02 | 12958.00 | 763.34  |    | 763.34  | .00    | .00   | -2.00  | .2061  | 42.993 | .0000  | .0000 |
| 131.771                      | 118.17 | 118.06 | 5951.74 | 143.90 | .041 | 58.63  | 14787.18 | 765.62  |    | 765.62  | .00    | .00   | -2.28  | .2060  | 42.993 | .0000  | .0000 |
| 143.919                      | 118.14 | 118.03 | 5951.80 | 130.08 | .039 | 451.95 | 16270.66 | 808.19  |    | 808.19  | 40.54  | 40.54 | -2.03  | .2060  | 42.985 | .0000  | .0000 |
| 155.919                      | 118.12 | 117.99 | 5951.63 | 153.54 | .044 | 452.60 | 16291.59 | 899.50  |    | 899.50  | 88.69  | 88.69 | -2.61  | .2061  | 42.979 | .0000  | .0000 |
| 173.919                      | 118.09 | 117.93 | 5951.43 | 169.01 | .048 | 453.21 | 16312.39 | 990.96  |    | 990.96  | 88.84  | 88.84 | -2.62  | .2061  | 42.974 | .0000  | .0000 |
| 188.919                      | 118.07 | 117.88 | 5951.24 | 183.44 | .052 | 453.72 | 16331.74 | 1076.39 |    | 1076.39 | 82.81  | 82.81 | -2.62  | .2062  | 42.961 | .0000  | .0000 |
| 203.919                      | 118.05 | 117.85 | 5951.13 | 190.82 | .055 | 340.45 | 16348.12 | 1120.59 |    | 1120.59 | 41.56  | 41.56 | -2.63  | .2062  | 42.901 | .0000  | .0000 |
| 218.919                      | 118.05 | 117.85 | 5951.12 | 191.18 | .055 | .00    | 16374.47 | 1125.89 |    | 1125.89 | .00    | .00   | -2.67  | .2061  | 42.793 | .0000  | .0000 |
| 233.919                      | 118.06 | 117.85 | 5951.12 | 191.61 | .055 | .00    | 16414.70 | 1128.53 |    | 1128.53 | .00    | .00   | -2.64  | .2061  | 42.686 | .0000  | .0000 |
| 248.919                      | 118.06 | 117.85 | 5951.12 | 191.61 | .055 | .00    | 16454.81 | 1131.17 |    | 1131.17 | .00    | .00   | -2.65  | .2061  | 42.468 | .0000  | .0000 |
| 263.919                      | 118.06 | 117.85 | 5951.11 | 192.04 | .055 | .00    | 16474.69 | 1136.49 |    | 1136.49 | .00    | .00   | -2.66  | .2061  | 42.252 | .0000  | .0000 |
| 278.919                      | 118.06 | 117.85 | 5951.11 | 192.26 | .055 | .00    | 16494.46 | 1139.15 |    | 1139.15 | .00    | .00   | -2.66  | .2061  | 42.143 | .0000  | .0000 |
| 293.919                      | 118.06 | 117.85 | 5951.11 | 192.48 | .055 | .00    | 16514.11 | 1141.82 |    | 1141.82 | .00    | .00   | -2.67  | .2061  | 42.035 | .0000  | .0000 |
| 308.919                      | 118.06 | 117.85 | 5951.10 | 192.71 | .055 | .00    | 16533.64 | 1144.50 |    | 1144.50 | .00    | .00   | -2.68  | .2061  | 41.927 | .0000  | .0000 |
| 323.919                      | 118.06 | 117.85 | 5951.10 | 192.93 | .055 | .00    | 16553.06 | 1147.18 |    | 1147.18 | .00    | .00   | -2.68  | .2061  | 41.819 | .0000  | .0000 |
| 338.919                      | 118.06 | 117.85 | 5951.10 | 193.16 | .055 | .00    | 16572.36 | 1149.86 |    | 1149.86 | .00    | .00   | -2.69  | .2061  | 41.710 | .0000  | .0000 |
| 353.919                      | 118.06 | 117.85 | 5951.09 | 193.39 | .055 | .00    | 16591.55 | 1152.56 |    | 1152.56 | .00    | .00   | -2.70  | .2061  | 41.602 | .0000  | .0000 |
| 368.919                      | 118.06 | 117.85 | 5951.09 | 193.62 | .055 | .00    | 16610.62 | 1155.25 |    | 1155.25 | .00    | .00   | -2.70  | .2061  | 41.494 | .0000  | .0000 |
| 383.919                      | 118.06 | 117.85 | 5951.09 | 193.88 | .055 | .00    | 16615.85 | 1158.00 |    | 1158.00 | .00    | .00   | -2.74  | .2061  | 41.464 | .0000  | .0000 |
| 398.919                      | 118.06 | 117.85 | 5951.09 | 194.15 | .055 | .00    | 16619.13 | 1160.69 |    | 1160.69 | .00    | .00   | -2.69  | .2061  | 41.192 | .0000  | .0000 |
| 413.919                      | 118.07 | 117.85 | 5951.05 | 194.86 | .056 | .00    | 16631.45 | 1163.29 |    | 1163.29 | .00    | .00   | -1.60  | .2061  | 41.174 | .0000  | .0000 |
| 427.051                      | 118.07 | 117.85 | 5951.03 | 197.17 | .056 | .00    | 16631.45 | 1163.29 |    | 1163.29 | .00    | .00   | -1.60  | .2061  | 41.174 | .0000  | .0000 |
| 442.061                      | 118.06 | 117.77 | 5950.50 | 229.75 | .066 | .00    | 14067.75 | 4160.29 |    | 4160.29 | .00    | .00   | -2.35  | .2061  | 41.029 | .0000  | .0000 |
| 457.061                      | 118.03 | 117.77 | 5950.71 | 217.16 | .062 | .00    | 14913.91 | 1162.64 |    | 1162.64 | .00    | .00   | -2.46  | .2060  | 42.849 | .0000  | .0000 |
| 472.061                      | 118.00 | 117.74 | 5950.89 | 206.57 | .059 | 314.89 | 15000.79 | 1171.59 |    | 1171.59 | 6.49   | 6.49  | -1.05  | .2057  | 42.805 | .0000  | .0000 |
| 487.061                      | 117.98 | 117.74 | 5950.88 | 202.29 | .064 | 450.86 | 16175.75 | 1203.25 |    | 1203.25 | 30.71  | 30.71 | -2.59  | .2057  | 42.785 | .0000  | .0000 |
| 502.061                      | 117.94 | 117.67 | 5950.62 | 222.91 | .068 | 451.37 | 16187.73 | 1294.25 |    | 1294.25 | 88.31  | 88.31 | -2.59  | .2058  | 42.775 | .0000  | .0000 |
| 517.061                      | 117.91 | 117.59 | 5950.34 | 238.56 | .073 | 451.95 | 16199.65 | 1385.28 |    | 1385.28 | 88.44  | 88.44 | -2.60  | .2058  | 42.765 | .0000  | .0000 |
| 532.061                      | 117.87 | 117.51 | 5950.04 | 254.23 | .077 | 452.54 | 16211.49 | 1476.44 |    | 1476.44 | 88.70  | 88.70 | -2.60  | .2058  | 42.755 | .0000  | .0000 |
| 547.061                      | 117.83 | 117.42 | 5949.72 | 269.94 | .082 | 453.12 | 16223.26 | 1567.74 |    | 1567.74 | 89.27  | 89.27 | -2.55  | .2058  | 42.745 | .0000  | .0000 |
| 562.061                      | 117.78 | 117.33 | 5949.38 | 285.75 | .085 | 453.70 | 16235.01 | 1659.55 |    | 1659.55 | 57.83  | 57.83 | -2.61  | .2058  | 42.701 | .0000  | .0000 |
| 577.061                      | 117.75 | 117.26 | 5949.14 | 298.14 | .085 | 397.29 | 16244.23 | 1719.99 |    | 1719.99 | 11.17  | 11.17 | -2.61  | .2058  | 42.605 | .0000  | .0000 |
| 592.061                      | 117.75 | 117.25 | 5949.09 | 298.37 | .085 | 227.04 | 16253.46 | 1733.77 |    | 1733.77 | .00    | .00   | -2.60  | .2058  | 42.497 | .0000  | .0000 |
| 607.061                      | 117.75 | 117.25 | 5949.09 | 298.52 | .085 | .00    | 16269.66 | 1736.37 |    | 1736.37 | .00    | .00   | -2.61  | .2058  | 42.389 | .0000  | .0000 |
| 622.061                      | 117.75 | 117.25 | 5949.09 | 298.76 | .085 | .00    | 16281.08 | 1738.98 |    | 1738.98 | .00    | .00   | -2.61  | .2058  | 42.280 | .0000  | .0000 |
| 637.061                      | 117.75 | 117.25 | 5949.09 | 299.02 | .085 | .00    | 16292.44 | 1741.59 |    | 1741.59 | .00    | .00   | -2.61  | .2058  | 42.171 | .0000  | .0000 |

|          |        |        |         |        |      |       |          |         |     |       |       |        |       |       |
|----------|--------|--------|---------|--------|------|-------|----------|---------|-----|-------|-------|--------|-------|-------|
| 628.204  | 117.75 | 117.25 | 5949.07 | 299.24 | .086 | .00   | 16303.72 | 1744.20 | .00 | -2.62 | .2058 | 42.172 | .0000 | .000  |
| 643.204  | 117.75 | 117.25 | 5949.07 | 299.49 | .086 | .00   | 16314.94 | 1746.83 | .00 | -2.62 | .2058 | 42.064 | .0000 | .000  |
| 658.204  | 117.75 | 117.25 | 5949.06 | 299.73 | .086 | .00   | 16326.08 | 1749.45 | .00 | -2.63 | .2058 | 41.955 | .0000 | .000  |
| 673.204  | 117.75 | 117.25 | 5949.05 | 299.98 | .086 | .00   | 16337.16 | 1752.08 | .00 | -2.63 | .2058 | 41.847 | .0000 | .000  |
| 688.204  | 117.75 | 117.25 | 5949.05 | 300.23 | .086 | .00   | 16348.17 | 1754.71 | .00 | -2.63 | .2058 | 41.738 | .0000 | .000  |
| 703.204  | 117.75 | 117.25 | 5949.04 | 300.48 | .086 | .00   | 16359.10 | 1757.35 | .00 | -2.64 | .2058 | 41.630 | .0000 | .000  |
| 718.204  | 117.76 | 117.25 | 5949.04 | 300.73 | .086 | .00   | 16369.97 | 1759.99 | .00 | -2.64 | .2058 | 41.522 | .0000 | .000  |
| 726.191  | 117.76 | 117.25 | 5949.03 | 300.86 | .086 | .00   | 16375.73 | 1761.40 | .00 | -1.41 | .2058 | 41.464 | .0000 | .000  |
| 741.191  | 117.76 | 117.25 | 5949.03 | 301.19 | .086 | .00   | 16382.80 | 1764.05 | .00 | -2.65 | .2058 | 41.140 | .0000 | .000  |
| 746.236  | 117.76 | 117.25 | 5949.02 | 301.30 | .086 | .00   | 16385.20 | 1764.96 | .00 | -.91  | .2058 | 41.240 | .0000 | .000  |
| 746.346  | 117.75 | 117.09 | 5947.94 | 344.46 | .099 | .00   | 14349.56 | 1764.96 | .00 | -.00  | .2057 | 41.029 | .0000 | .000  |
| 761.346  | 117.69 | 117.09 | 5948.31 | 330.60 | .095 | .00   | 14972.15 | 1767.32 | .00 | -2.37 | .2057 | 41.104 | .0000 | .000  |
| 776.346  | 117.65 | 117.09 | 5948.63 | 317.82 | .091 | .00   | 15597.03 | 1769.79 | .00 | -2.47 | .2057 | 41.178 | .0000 | .000  |
| 791.346  | 117.61 | 117.09 | 5948.91 | 305.99 | .087 | .00   | 16224.19 | 1772.36 | .00 | -2.57 | .2057 | 41.253 | .0000 | .000  |
| 794.631  | 117.60 | 117.09 | 5948.98 | 303.37 | .087 | .00   | 16376.23 | 1772.97 | .00 | -.61  | .2057 | 41.270 | .0000 | .000  |
| 804.631  | 117.60 | 117.09 | 5948.96 | 303.94 | .087 | .00   | 16363.57 | 1775.61 | .00 | -2.64 | .2057 | 41.093 | .0000 | .000  |
| 824.631  | 117.60 | 117.09 | 5948.95 | 304.52 | .087 | .00   | 16356.92 | 1778.25 | .00 | -2.64 | .2057 | 40.916 | .0000 | .000  |
| 837.631  | 117.60 | 117.09 | 5948.93 | 305.09 | .087 | .00   | 16350.28 | 1780.89 | .00 | -2.64 | .2057 | 40.739 | .0000 | .000  |
| 854.781  | 117.61 | 117.09 | 5948.92 | 305.67 | .087 | .00   | 16343.67 | 1783.52 | .00 | -2.63 | .2057 | 40.563 | .0000 | .000  |
| 867.781  | 117.61 | 117.09 | 5948.90 | 306.64 | .088 | .00   | 16315.82 | 1786.15 | .00 | -2.64 | .2057 | 39.794 | .0000 | .000  |
| 884.781  | 117.61 | 117.09 | 5948.87 | 307.62 | .088 | .00   | 16287.96 | 1788.78 | .00 | -2.63 | .2057 | 39.025 | .0000 | .000  |
| 894.781  | 117.62 | 117.09 | 5948.85 | 308.59 | .088 | .00   | 16260.09 | 1791.41 | .00 | -2.63 | .2057 | 38.255 | .0000 | .000  |
| 914.781  | 117.62 | 117.09 | 5948.83 | 309.57 | .089 | .00   | 16232.22 | 1794.03 | .00 | -2.62 | .2057 | 37.486 | .0000 | .000  |
| 927.781  | 117.62 | 117.09 | 5948.80 | 310.56 | .089 | .00   | 16204.33 | 1796.65 | .00 | -2.62 | .2057 | 36.717 | .0000 | .000  |
| 944.781  | 117.63 | 117.09 | 5948.78 | 311.55 | .089 | .00   | 16176.44 | 1799.26 | .00 | -2.61 | .2057 | 35.948 | .0000 | .000  |
| 957.781  | 117.63 | 117.09 | 5948.76 | 312.53 | .089 | .00   | 16148.55 | 1801.87 | .00 | -2.61 | .2057 | 35.178 | .0000 | .000  |
| 974.781  | 117.63 | 117.09 | 5948.73 | 313.53 | .090 | .00   | 16120.65 | 1804.47 | .00 | -2.60 | .2057 | 34.409 | .0000 | .000  |
| 987.781  | 117.64 | 117.09 | 5948.71 | 314.52 | .090 | .00   | 16092.74 | 1807.07 | .00 | -2.60 | .2057 | 33.640 | .0000 | .000  |
| 1004.781 | 117.64 | 117.09 | 5948.68 | 315.52 | .090 | .00   | 16064.82 | 1809.67 | .00 | -2.59 | .2057 | 32.871 | .0000 | .000  |
| 1017.781 | 117.64 | 117.09 | 5948.66 | 316.52 | .091 | .00   | 16036.89 | 1812.26 | .00 | -2.59 | .2057 | 32.101 | .0000 | .000  |
| 1031.781 | 117.65 | 117.09 | 5948.64 | 317.52 | .091 | .00   | 16008.96 | 1814.84 | .00 | -2.59 | .2057 | 31.332 | .0000 | .000  |
| 1045.781 | 117.65 | 117.09 | 5948.63 | 317.93 | .091 | .00   | 15997.77 | 1815.88 | .00 | -1.03 | .2057 | 31.024 | .0000 | .000  |
| 1055.791 | 117.65 | 117.09 | 5948.60 | 318.93 | .091 | .00   | 15969.84 | 1818.46 | .00 | -2.58 | .2057 | 30.483 | .0000 | .000  |
| 1070.791 | 117.66 | 117.09 | 5948.58 | 319.94 | .091 | .00   | 15941.80 | 1821.03 | .00 | -2.57 | .2057 | 29.942 | .0000 | .000  |
| 1084.791 | 117.66 | 117.09 | 5948.55 | 320.85 | .092 | .00   | 15916.69 | 1823.32 | .00 | -2.29 | .2057 | 29.459 | .0000 | .000  |
| AF1(A)   | 116.49 | 111.15 | 5913.77 | 994.57 | .285 | ..... | 15023.73 | 1831.11 | .00 | -4.73 | .2051 | 29.460 | ..... | ..... |
| AF1(B)   | 116.49 | 116.49 | 5951.85 | -.83   | .000 | ..... | 10413.12 | 3.06    | .00 | -3.06 | .2049 | 20.670 | ..... | ..... |



|                                         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|-----------------------------------------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FORWARD                                 | 1.1676+02                            | 1.1821+02  | 1.1812+02 | 5.9519+03   | 1.2883+02   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 7.6334+02       |
| AFT                                     | 1.1677+02                            | 1.1815+02  | 1.1806+02 | 5.9515+03   | 1.2889+02   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 7.6334+02       |
| GAS BUILDUP IN SLOT, DW/DT = -1.7893-03 |                                      |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 4.2705+02                            | 1.1807+02  | 1.1785+02 | 5.9510+03   | 1.9716+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1603+03       |
| AFT                                     | 4.2706+02                            | 1.1798+02  | 1.1777+02 | 5.9505+03   | 1.9728+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.1603+03       |
| GAS BUILDUP IN SLOT, DW/DT = -1.7764-03 |                                      |            |           |             |             |               |                 |               |              |                     |                 |
| FORWARD                                 | 7.4634+02                            | 1.1776+02  | 1.1725+02 | 5.9490+03   | 3.0134+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.7650+03       |
| AFT                                     | 7.4635+02                            | 1.1759+02  | 1.1709+02 | 5.9479+03   | 3.0171+02   | 1.6383+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 1.7650+03       |
| GAS BUILDUP IN SLOT, DW/DT = -1.7646-03 |                                      |            |           |             |             |               |                 |               |              |                     |                 |

|                                       |          |             |        |        |         |          |         |             |            |              |
|---------------------------------------|----------|-------------|--------|--------|---------|----------|---------|-------------|------------|--------------|
| WEB BURNOUT INCREMENT LOCATION =      | 173.9190 | SECTOR NO.  | 2      | TAU =  | 43.1175 | TAUWDP = | 43.1175 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 173.9190 | SECTOR NO.  | 3      | TAU =  | 43.1175 | TAUWDP = | 43.1175 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 188.9190 | SECTOR NO.  | 1      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 188.9190 | SECTOR NO.  | 4      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 188.9190 | SECTOR NO.  | 5      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 188.9190 | SECTOR NO.  | 6      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 188.9190 | SECTOR NO.  | 7      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 188.9190 | SECTOR NO.  | 8      | TAU =  | 43.0093 | TAUWDP = | 43.0093 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 457.0610 | SECTOR NO.  | 1      | TAU =  | 42.9671 | TAUWDP = | 42.9671 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 457.0610 | SECTOR NO.  | 2      | TAU =  | 42.9671 | TAUWDP = | 42.9671 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 457.0610 | SECTOR NO.  | 3      | TAU =  | 42.9671 | TAUWDP = | 42.9671 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 457.0610 | SECTOR NO.  | 4      | TAU =  | 42.9671 | TAUWDP = | 42.9671 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 523.2040 | SECTOR NO.  | 2      | TAU =  | 42.9305 | TAUWDP = | 42.9305 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 538.2040 | SECTOR NO.  | 1      | TAU =  | 42.8221 | TAUWDP = | 42.8221 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 538.2040 | SECTOR NO.  | 2      | TAU =  | 42.8221 | TAUWDP = | 42.8221 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 538.2040 | SECTOR NO.  | 3      | TAU =  | 42.8221 | TAUWDP = | 42.8221 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 538.2040 | SECTOR NO.  | 4      | TAU =  | 42.8221 | TAUWDP = | 42.8221 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 553.2040 | SECTOR NO.  | 5      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 553.2040 | SECTOR NO.  | 6      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 553.2040 | SECTOR NO.  | 7      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME =      | 116.00     |              |
| WEB BURNOUT INCREMENT LOCATION =      | 553.2040 | SECTOR NO.  | 8      | TAU =  | 42.7138 | TAUWDP = | 42.7138 | TIME =      | 116.00     |              |
| *PARTBN* TIME=116.50 IS=2 ZCALC( 14)= | 173.92   | ZCALC( 13)= | 158.92 | AINCW= | 169.13  | AINCHI=  | 158.92  | DELZ=10.207 | ALP=453.97 | ALPHI=453.63 |
| *PARTBN* TIME=116.50 IS=3 ZCALC( 14)= | 173.92   | ZCALC( 13)= | 158.92 | AINCW= | 170.32  | AINCHI=  | 158.92  | DELZ=11.401 | ALP=453.97 | ALPHI=453.58 |
| *PARTBN* TIME=116.50 IS=1 ZCALC( 15)= | 188.92   | ZCALC( 14)= | 173.92 | AINCW= | 175.57  | AINCHI=  | 173.92  | DELZ= 1.646 | ALP=453.96 | ALPHI=453.95 |
| *PARTBN* TIME=116.50 IS=4 ZCALC( 15)= | 188.92   | ZCALC( 14)= | 173.92 | AINCW= | 177.35  | AINCHI=  | 173.92  | DELZ= 3.435 | ALP=453.96 | ALPHI=453.88 |
| *PARTBN* TIME=116.50 IS=5 ZCALC( 15)= | 188.92   | ZCALC( 14)= | 173.92 | AINCW= | 185.71  | AINCHI=  | 173.92  | DELZ=11.788 | ALP=453.95 | ALPHI=453.56 |
| *PARTBN* TIME=116.50 IS=6 ZCALC( 15)= | 188.92   | ZCALC( 14)= | 173.92 | AINCW= | 188.21  | AINCHI=  | 173.92  | DELZ=14.296 | ALP=453.94 | ALPHI=453.47 |
| *PARTBN* TIME=116.50 IS=7 ZCALC( 15)= | 188.92   | ZCALC( 14)= | 173.92 | AINCW= | 187.72  | AINCHI=  | 173.92  | DELZ=13.805 | ALP=453.94 | ALPHI=453.49 |
| *PARTBN* TIME=116.50 IS=8 ZCALC( 15)= | 188.92   | ZCALC( 14)= | 173.92 | AINCW= | 184.85  | AINCHI=  | 173.92  | DELZ=10.933 | ALP=453.95 | ALPHI=453.60 |
| *PARTBN* TIME=116.50 IS=5 ZCALC( 35)= | 457.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCHI=  | 456.24  | DELZ= .824  | ALP=314.72 | ALPHI=279.15 |
| *PARTBN* TIME=116.50 IS=6 ZCALC( 35)= | 457.06   | ZCALC( 34)= | 442.06 | AINCW= | 457.06  | AINCHI=  | 455.98  | DELZ= 1.000 | ALP=314.77 | ALPHI=272.72 |

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|        |             |      |              |        |              |        |        |        |        |        |        |        |       |        |      |        |        |        |
|--------|-------------|------|--------------|--------|--------------|--------|--------|--------|--------|--------|--------|--------|-------|--------|------|--------|--------|--------|
| PARIBN | TIME=117.00 | 15=7 | ZCALC( 14)=  | 173.92 | ZCALC( 13)=  | 158.92 | AINCW= | 173.59 | AINCW= | 173.59 | AINCW= | 158.92 | DELZ= | 14.675 | ALP= | 453.96 | ALPHI= | 453.45 |
| PARIBN | TIME=117.00 | 15=8 | ZCALC( 14)=  | 173.92 | ZCALC( 13)=  | 158.92 | AINCW= | 173.59 | AINCW= | 173.59 | AINCW= | 158.92 | DELZ= | 11.800 | ALP= | 453.97 | ALPHI= | 453.57 |
| PARIBN | TIME=117.00 | 15=1 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 4.600  | ALP= | 452.29 | ALPHI= | 453.66 |
| PARIBN | TIME=117.00 | 15=2 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 3.985  | ALP= | 452.56 | ALPHI= | 453.12 |
| PARIBN | TIME=117.00 | 15=3 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 4.100  | ALP= | 452.51 | ALPHI= | 453.24 |
| PARIBN | TIME=117.00 | 15=4 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 4.771  | ALP= | 452.21 | ALPHI= | 453.37 |
| PARIBN | TIME=117.00 | 15=5 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.564  | ALP= | 451.86 | ALPHI= | 453.42 |
| PARIBN | TIME=117.00 | 15=6 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.803  | ALP= | 451.76 | ALPHI= | 453.42 |
| PARIBN | TIME=117.00 | 15=7 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.757  | ALP= | 451.78 | ALPHI= | 453.59 |
| PARIBN | TIME=117.00 | 15=8 | ZCALC( 36)=  | 463.20 | ZCALC( 35)=  | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.483  | ALP= | 451.90 | ALPHI= | 453.47 |
| PARIBN | TIME=117.00 | 15=2 | ZCALC( 39)=  | 508.20 | ZCALC( 38)=  | 493.20 | AINCW= | 508.20 | AINCW= | 508.20 | AINCW= | 493.20 | DELZ= | 15.118 | ALP= | 454.19 | ALPHI= | 453.66 |
| PARIBN | TIME=117.00 | 15=3 | ZCALC( 39)=  | 508.20 | ZCALC( 38)=  | 493.20 | AINCW= | 508.20 | AINCW= | 508.20 | AINCW= | 493.20 | DELZ= | 16.363 | ALP= | 454.19 | ALPHI= | 453.61 |
| PARIBN | TIME=117.00 | 15=4 | ZCALC( 40)=  | 523.20 | ZCALC( 39)=  | 508.20 | AINCW= | 516.90 | AINCW= | 516.90 | AINCW= | 508.20 | DELZ= | 6.832  | ALP= | 454.18 | ALPHI= | 453.97 |
| PARIBN | TIME=117.00 | 15=5 | ZCALC( 40)=  | 523.20 | ZCALC( 39)=  | 508.20 | AINCW= | 516.90 | AINCW= | 516.90 | AINCW= | 508.20 | DELZ= | 8.695  | ALP= | 454.17 | ALPHI= | 453.90 |
| PARIBN | TIME=117.00 | 15=6 | ZCALC( 40)=  | 523.20 | ZCALC( 39)=  | 508.20 | AINCW= | 524.71 | AINCW= | 524.71 | AINCW= | 508.20 | DELZ= | 16.502 | ALP= | 454.15 | ALPHI= | 453.58 |
| PARIBN | TIME=117.00 | 15=7 | ZCALC( 40)=  | 523.20 | ZCALC( 39)=  | 508.20 | AINCW= | 525.60 | AINCW= | 525.60 | AINCW= | 523.20 | DELZ= | 2.397  | ALP= | 454.14 | ALPHI= | 454.01 |
| PARIBN | TIME=117.00 | 15=8 | ZCALC( 40)=  | 523.20 | ZCALC( 39)=  | 508.20 | AINCW= | 527.70 | AINCW= | 527.70 | AINCW= | 523.20 | DELZ= | 4.496  | ALP= | 454.15 | ALPHI= | 454.03 |
| PARIBN | TIME=117.00 | 15=2 | ZCALC( 91)=  | 116.76 | ZCALC( 81)=  | 105.00 | AINCW= | 119.76 | AINCW= | 119.76 | AINCW= | 105.00 | DELZ= | 14.760 | ALP= | 454.74 | ALPHI= | 454.53 |
| PARIBN | TIME=117.00 | 15=3 | ZCALC( 131)= | 158.92 | ZCALC( 121)= | 143.92 | AINCW= | 154.98 | AINCW= | 154.98 | AINCW= | 143.92 | DELZ= | 11.066 | ALP= | 453.99 | ALPHI= | 453.60 |
| PARIBN | TIME=117.00 | 15=4 | ZCALC( 131)= | 158.92 | ZCALC( 121)= | 143.92 | AINCW= | 156.17 | AINCW= | 156.17 | AINCW= | 143.92 | DELZ= | 12.254 | ALP= | 453.98 | ALPHI= | 453.55 |
| PARIBN | TIME=117.00 | 15=5 | ZCALC( 131)= | 173.92 | ZCALC( 131)= | 158.92 | AINCW= | 161.42 | AINCW= | 161.42 | AINCW= | 158.92 | DELZ= | 2.503  | ALP= | 453.98 | ALPHI= | 453.94 |
| PARIBN | TIME=117.00 | 15=6 | ZCALC( 131)= | 173.92 | ZCALC( 131)= | 158.92 | AINCW= | 163.21 | AINCW= | 163.21 | AINCW= | 158.92 | DELZ= | 4.294  | ALP= | 453.98 | ALPHI= | 453.87 |
| PARIBN | TIME=117.00 | 15=7 | ZCALC( 131)= | 173.92 | ZCALC( 131)= | 158.92 | AINCW= | 171.57 | AINCW= | 171.57 | AINCW= | 158.92 | DELZ= | 12.655 | ALP= | 453.96 | ALPHI= | 453.53 |
| PARIBN | TIME=117.00 | 15=8 | ZCALC( 131)= | 173.92 | ZCALC( 131)= | 158.92 | AINCW= | 174.09 | AINCW= | 174.09 | AINCW= | 158.92 | DELZ= | 15.167 | ALP= | 453.96 | ALPHI= | 453.43 |
| PARIBN | TIME=117.00 | 15=2 | ZCALC( 141)= | 173.92 | ZCALC( 131)= | 158.92 | AINCW= | 173.59 | AINCW= | 173.59 | AINCW= | 158.92 | DELZ= | 14.675 | ALP= | 453.96 | ALPHI= | 453.45 |
| PARIBN | TIME=117.00 | 15=3 | ZCALC( 141)= | 173.92 | ZCALC( 131)= | 158.92 | AINCW= | 170.72 | AINCW= | 170.72 | AINCW= | 158.92 | DELZ= | 11.800 | ALP= | 453.97 | ALPHI= | 453.57 |
| PARIBN | TIME=117.00 | 15=4 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 4.600  | ALP= | 452.29 | ALPHI= | 453.66 |
| PARIBN | TIME=117.00 | 15=5 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 3.985  | ALP= | 452.56 | ALPHI= | 453.12 |
| PARIBN | TIME=117.00 | 15=6 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 4.100  | ALP= | 452.51 | ALPHI= | 453.24 |
| PARIBN | TIME=117.00 | 15=7 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 4.771  | ALP= | 452.21 | ALPHI= | 453.37 |
| PARIBN | TIME=117.00 | 15=8 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.564  | ALP= | 451.86 | ALPHI= | 453.42 |
| PARIBN | TIME=117.00 | 15=2 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.803  | ALP= | 451.76 | ALPHI= | 453.42 |
| PARIBN | TIME=117.00 | 15=3 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.757  | ALP= | 451.78 | ALPHI= | 453.59 |
| PARIBN | TIME=117.00 | 15=4 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCW= | 463.20 | AINCW= | 457.06 | DELZ= | 5.483  | ALP= | 451.90 | ALPHI= | 453.47 |
| PARIBN | TIME=117.00 | 15=5 | ZCALC( 391)= | 508.20 | ZCALC( 381)= | 493.20 | AINCW= | 508.20 | AINCW= | 508.20 | AINCW= | 493.20 | DELZ= | 15.118 | ALP= | 454.19 | ALPHI= | 453.66 |
| PARIBN | TIME=117.00 | 15=6 | ZCALC( 391)= | 508.20 | ZCALC( 381)= | 493.20 | AINCW= | 509.57 | AINCW= | 509.57 | AINCW= | 493.20 | DELZ= | 16.363 | ALP= | 454.19 | ALPHI= | 453.61 |
| PARIBN | TIME=117.00 | 15=7 | ZCALC( 401)= | 523.20 | ZCALC( 391)= | 508.20 | AINCW= | 516.90 | AINCW= | 516.90 | AINCW= | 508.20 | DELZ= | 6.832  | ALP= | 454.18 | ALPHI= | 453.97 |
| PARIBN | TIME=117.00 | 15=8 | ZCALC( 401)= | 523.20 | ZCALC( 391)= | 508.20 | AINCW= | 524.71 | AINCW= | 524.71 | AINCW= | 508.20 | DELZ= | 8.695  | ALP= | 454.17 | ALPHI= | 453.90 |
| PARIBN | TIME=117.00 | 15=2 | ZCALC( 401)= | 523.20 | ZCALC( 391)= | 508.20 | AINCW= | 525.60 | AINCW= | 525.60 | AINCW= | 523.20 | DELZ= | 16.502 | ALP= | 454.15 | ALPHI= | 453.58 |
| PARIBN | TIME=117.00 | 15=3 | ZCALC( 401)= | 523.20 | ZCALC( 391)= | 508.20 | AINCW= | 527.70 | AINCW= | 527.70 | AINCW= | 523.20 | DELZ= | 2.397  | ALP= | 454.14 | ALPHI= | 454.01 |
| PARIBN | TIME=117.00 | 15=4 | ZCALC( 401)= | 523.20 | ZCALC( 391)= | 508.20 | AINCW= | 527.70 | AINCW= | 527.70 | AINCW= | 523.20 | DELZ= | 4.496  | ALP= | 454.15 | ALPHI= | 454.03 |

IGNITION TIME, TIME (S) 117.03000

| PARAMETER DESCRIPTION (UNITS)               | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|---------------------------------------------|----------------------|---------------|--------------|
| MOTOR PARAMETERS:                           |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)              | FTDEL                | 1449285.3     | 325812.30    |
| TOTAL VACUUM THRUST (N,LBF)                 | FTVAC                | 1454547.0     | 326995.18    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)       | FI                   | 11826.473     | 2650.6963    |
| DELIVERED TOTAL IMPULSE (N* S, LBF* S)      | SNMHTI               | .12315096*10  | .27685438*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S, S)        | TISP                 | 254.31234     | 254.31234    |
| VACUUM TOTAL IMPULSE (N* S, LBF* S)         | SNMVTI               | .12045263*10  | .28809851*09 |
| THRUST COEFFICIENT                          | CF                   | 1.6286356     | 1.6286356    |
| GAS DISCHARGE MASS FLOWRATE (KG/S, LBM/S)   | WDOT                 | 576.80253     | 1271.8083    |
| FLOWRATE INTEGRAL (KG, LBM)                 | SMDOTN               | 504628.43     | 1112515.2    |
| INERT MASS FLOWRATE (KG/S, LBM/S)           | MIF                  | 6.3471808     | 13.993138    |
| INERT MASS REMAINING (KG, LBM)              | MIR                  | 22.659757     | 49.956213    |
| TOTAL BURN AREA (M*2, IN*2)                 | ABTOT                | 59.057314     | 91538.556    |
| TOTAL PROPELLANT VOLUME (M*3, IN*3)         | VF                   | 3.2196535     | 196475.31    |
| PROPELLANT MASS REMAINING (KG, LBM)         | WF                   | 1942.7546     | 4283.6408    |
| TOTAL GAS MASS (KG, LBM)                    | WGTOT                | 234.70632     | 451.30019    |
| RATIO OF SPECIFIC HEATS                     | GAMA                 | 1.1592183     | 1.1592180    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE, LBM/MOLE) | AMW                  | 12.707765     | 28.015826    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S, FT/S) | CSTAR                | 1548.1875     | 5079.3555    |
| MAXIMUM CHAMBER MACH NUMBER                 | AMPN                 | .97963216-01  | .97963216-01 |
| HEAD END PARAMETERS:                        |                      |               |              |
| TOTAL PRESSURE (N/M*2, LBF/IN*2)            | PH                   | 56603596.     | 82.096576    |
| PRESSURE INTEGRAL (N* S/M*2, LBF* S/IN*2)   | SPHDT                | .53196936*11  | 77155.033    |
| BURN AREA (M*2, IN*2)                       | AMH                  | .62902960     | 974.99814    |
| BURN RATE (M/S, IN/S)                       | R8Z(1)               | .46193429-02  | .18186586    |
| DISTANCE BURNED (M, IN)                     | TAUZ(1)              | 1.0991636     | 43.274158    |
| PROPELLANT VOLUME (M*3, IN*3)               | VFN                  | .22713892     | 13860.867    |
| GAS VOLUME (M*3, IN*3)                      | VPH                  | 54.876693     | 3348781.3    |
| GAS STATIC TEMPERATURE (DEG K, DEG R)       | PHNT(1,3)            | 3299.2242     | 5938.6035    |
| CYLINDRICAL SECTION PARAMETERS:             |                      |               |              |
| RADIAL BURN AREA (M*2, IN*2)                | ABCYL                | 58.427984     | 93563.558    |
| SEGMENT FACE BURN AREA (M*2, IN*2)          | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M*3, IN*3)               | VFCYL                | 249985484     | 182494.46    |
| GAS VOLUME (M*3, IN*3)                      | VP                   | 285.04661     | 17394611.    |
| AFT END PARAMETERS:                         |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M*2, LBF/IN*2)    | PON                  | 55745917.     | 89.852617    |
| PRESSURE INTEGRAL (N* S/M*2, LBF* S/IN*2)   | SPONDT               | .50783961*11  | 73655.909    |
| BURN AREA (M*2, IN*2)                       | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S, IN/SEC)           | R8Z(INI*1,1)         | .45803734-02  | .18247139    |
| BURN RATE, REGION B (M/S, IN/SEC)           | R8Z(INI*2,1)         | .45799340-02  | .18031118    |
| DISTANCE BURNED, REGION A (M, IN)           | TAUZ(INI*1,1)        | .74828423     | 29.460000    |
| DISTANCE BURNED, REGION B (M, IN)           | TAUZ(INI*2,1)        | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M*3, IN*3)               | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M*3, IN*3)                      | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K, DEG R)     | PHNT(INI*2,3)        | 3298.4601     | 5938.1261    |
| PORT AREA, NOZ ENT (M*2, IN*2)              | AZA                  | 10.708839     | 15823.733    |
| NOZZLE PARAMETERS:                          |                      |               |              |
| THROAT AREA (M*2, IN*2)                     | AT                   | 1.6021042     | 2483.2666    |
| EXPANSION RATIO                             | EPR                  | 6.7089984     | 6.7089984    |
| PRESSURE RATIO                              | PEPU                 | .23572244-01  | .23572244-01 |
| MISC-CELLANEOUS PARAMETERS:                 |                      |               |              |
| ADISOKEPIC BURN RATE COEFFICIENT            | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS               | ANLOPS               | 3.0000000     | 3.0000000    |

## INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>REGIONS | PO    | PSIA    | P | T | U      | M    | INCHES | AP       | WDOT    | DWDOT  | LB/SEC | DW/DT  | RU     | TAU    | RU/SEC | TAUTO |
|-----------------------------|-------|---------|---|---|--------|------|--------|----------|---------|--------|--------|--------|--------|--------|--------|-------|
|                             | PSIA  | DEG. R  |   |   | FT/SEC |      |        | SQ. IN.  | LB/SEC  | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FORE                        | 82.10 | 5938.60 |   |   | 9.85   | .003 | 452.19 | 16270.74 | 40.14   | 11.22  | -28.92 |        | .1814  | 43.274 | .0000  | .000  |
| 15.000                      | 82.10 | 5938.57 |   |   | 29.48  | .038 | 452.46 | 16290.45 | 120.30  | 78.08  | -2.08  |        | .1814  | 43.225 | .0000  | .000  |
| 35.000                      | 82.08 | 5938.51 |   |   | 49.08  | .014 | 452.73 | 16310.11 | 200.53  | 78.14  | -2.08  |        | .1814  | 43.221 | .0000  | .000  |
| 45.000                      | 82.07 | 5938.42 |   |   | 68.66  | .020 | 453.00 | 16329.73 | 280.81  | 78.20  | -2.09  |        | .1814  | 43.216 | .0000  | .000  |
| 65.000                      | 82.05 | 5938.31 |   |   | 88.22  | .025 | 453.27 | 16349.30 | 361.16  | 78.26  | -2.09  |        | .1815  | 43.212 | .0000  | .000  |
| 75.000                      | 82.02 | 5938.16 |   |   | 107.76 | .031 | 453.54 | 16368.83 | 441.56  | 78.31  | -2.09  |        | .1815  | 43.207 | .0000  | .000  |
| 95.000                      | 82.05 | 5937.98 |   |   | 127.29 | .036 | 453.81 | 16388.32 | 522.02  | 78.36  | -2.09  |        | .1815  | 43.202 | .0000  | .000  |
| 105.000                     | 82.04 | 5937.77 |   |   | 146.81 | .042 | 454.08 | 16407.76 | 602.53  | 78.41  | -2.10  |        | .1815  | 43.197 | .0000  | .000  |
| 115.761                     | 81.92 | 5937.59 |   |   | 162.55 | .046 | 454.29 | 16422.98 | 667.46  | 63.49  | -1.44  |        | .1815  | 43.192 | .0000  | .000  |
| 116.771                     | 81.84 | 5936.94 |   |   | 207.57 | .059 | 443.89 | 12870.98 | 667.47  | .00    | -0.0   |        | .1814  | 43.193 | .0000  | .000  |
| 131.771                     | 81.84 | 5937.34 |   |   | 181.04 | .052 | 51.75  | 14798.16 | 669.27  | .00    | -1.81  |        | .1814  | 43.192 | .0000  | .000  |
| 143.919                     | 81.82 | 5937.45 |   |   | 172.83 | .049 | 453.16 | 16361.10 | 706.19  | 35.29  | -1.62  |        | .1814  | 43.185 | .0000  | .000  |
| 158.919                     | 81.77 | 5937.19 |   |   | 191.36 | .055 | 453.72 | 16375.78 | 782.16  | 73.88  | -2.10  |        | .1814  | 43.174 | .0000  | .000  |
| 173.919                     | 81.74 | 5937.04 |   |   | 201.50 | .058 | 349.48 | 16388.52 | 823.98  | 39.73  | -2.09  |        | .1814  | 43.117 | .0000  | .000  |
| 183.919                     | 81.74 | 5937.03 |   |   | 201.78 | .058 | .00    | 16457.26 | 826.38  | .00    | -2.10  |        | .1814  | 43.007 | .0000  | .000  |
| 203.919                     | 81.74 | 5937.03 |   |   | 202.11 | .058 | .00    | 16422.47 | 828.18  | .00    | -2.10  |        | .1814  | 42.901 | .0000  | .000  |
| 218.919                     | 81.74 | 5937.02 |   |   | 202.44 | .058 | .00    | 16437.58 | 830.28  | .00    | -2.10  |        | .1814  | 42.793 | .0000  | .000  |
| 233.919                     | 81.74 | 5937.02 |   |   | 202.77 | .058 | .00    | 16452.61 | 832.39  | .00    | -2.11  |        | .1814  | 42.585 | .0000  | .000  |
| 248.919                     | 81.74 | 5937.01 |   |   | 203.10 | .058 | .00    | 16467.55 | 834.50  | .00    | -2.11  |        | .1814  | 42.576 | .0000  | .000  |
| 263.919                     | 81.74 | 5937.01 |   |   | 203.43 | .058 | .00    | 16482.40 | 836.62  | .00    | -2.12  |        | .1814  | 42.469 | .0000  | .000  |
| 278.919                     | 81.74 | 5937.00 |   |   | 203.76 | .058 | .00    | 16497.16 | 838.74  | .00    | -2.12  |        | .1814  | 42.360 | .0000  | .000  |
| 293.919                     | 81.74 | 5937.00 |   |   | 204.09 | .058 | .00    | 16511.83 | 840.86  | .00    | -2.12  |        | .1814  | 42.252 | .0000  | .000  |
| 308.919                     | 81.74 | 5936.99 |   |   | 204.43 | .058 | .00    | 16526.41 | 842.99  | .00    | -2.13  |        | .1814  | 42.143 | .0000  | .000  |
| 323.919                     | 81.74 | 5936.99 |   |   | 204.76 | .059 | .00    | 16540.90 | 845.12  | .00    | -2.13  |        | .1814  | 42.035 | .0000  | .000  |
| 338.919                     | 81.74 | 5936.98 |   |   | 205.10 | .059 | .00    | 16555.30 | 847.25  | .00    | -2.13  |        | .1814  | 41.927 | .0000  | .000  |
| 353.919                     | 81.74 | 5936.97 |   |   | 205.44 | .059 | .00    | 16569.61 | 849.39  | .00    | -2.14  |        | .1814  | 41.819 | .0000  | .000  |
| 368.919                     | 81.74 | 5936.97 |   |   | 205.78 | .059 | .00    | 16583.83 | 851.52  | .00    | -2.14  |        | .1814  | 41.710 | .0000  | .000  |
| 383.919                     | 81.74 | 5936.96 |   |   | 206.12 | .059 | .00    | 16597.96 | 853.67  | .00    | -2.14  |        | .1814  | 41.602 | .0000  | .000  |
| 398.919                     | 81.74 | 5936.96 |   |   | 206.47 | .059 | .00    | 16612.23 | 855.81  | .00    | -2.15  |        | .1814  | 41.494 | .0000  | .000  |
| 403.048                     | 81.74 | 5936.96 |   |   | 206.56 | .059 | .00    | 16615.85 | 856.41  | .00    | -2.15  |        | .1814  | 41.464 | .0000  | .000  |
| 418.048                     | 81.74 | 5936.92 |   |   | 206.92 | .060 | .00    | 16619.13 | 858.54  | .00    | -2.14  |        | .1814  | 41.192 | .0000  | .000  |
| 427.051                     | 81.74 | 5936.93 |   |   | 210.35 | .060 | .00    | 16381.95 | 859.82  | .00    | -1.27  |        | .1814  | 41.174 | .0000  | .000  |
| 427.061                     | 81.67 | 5936.28 |   |   | 245.12 | .070 | .00    | 14067.75 | 859.82  | .00    | -0.0   |        | .1813  | 41.029 | .0000  | .000  |
| 442.061                     | 81.67 | 5936.54 |   |   | 231.17 | .066 | .00    | 14950.12 | 861.69  | .00    | -1.87  |        | .1813  | 41.998 | .0000  | .000  |
| 457.061                     | 81.67 | 5936.77 |   |   | 218.17 | .062 | .00    | 15874.88 | 863.53  | .00    | -1.84  |        | .1813  | 42.967 | .0000  | .000  |
| 463.204                     | 81.66 | 5936.76 |   |   | 218.71 | .063 | 452.81 | 16265.83 | 866.76  | 22.38  | -0.85  |        | .1811  | 43.005 | .0000  | .000  |
| 478.204                     | 81.59 | 5936.41 |   |   | 238.53 | .068 | 452.62 | 16272.46 | 966.81  | 77.97  | -2.08  |        | .1811  | 42.984 | .0000  | .000  |
| 493.204                     | 81.52 | 5936.02 |   |   | 258.41 | .074 | 453.21 | 16279.05 | 1046.97 | 78.00  | -2.08  |        | .1811  | 42.975 | .0000  | .000  |
| 508.204                     | 81.74 | 5935.61 |   |   | 278.58 | .080 | 453.78 | 16285.63 | 1128.11 | 79.16  | -1.98  |        | .1812  | 42.965 | .0000  | .000  |
| 523.204                     | 81.59 | 5935.32 |   |   | 271.53 | .083 | 340.58 | 16291.28 | 1180.26 | 50.07  | -2.08  |        | .1811  | 42.923 | .0000  | .000  |
| 538.204                     | 81.38 | 5935.27 |   |   | 293.91 | .084 | 170.31 | 16296.48 | 1190.16 | 7.72   | -2.18  |        | .1811  | 42.822 | .0000  | .000  |
| 553.204                     | 81.38 | 5935.26 |   |   | 294.27 | .084 | .00    | 16304.96 | 1192.24 | .00    | -2.08  |        | .1811  | 42.714 | .0000  | .000  |
| 568.204                     | 81.38 | 5935.25 |   |   | 294.67 | .084 | .00    | 16311.33 | 1194.32 | .00    | -2.08  |        | .1811  | 42.605 | .0000  | .000  |
| 583.204                     | 81.38 | 5935.24 |   |   | 295.07 | .084 | .00    | 16317.65 | 1196.40 | .00    | -2.08  |        | .1811  | 42.497 | .0000  | .000  |
| 598.204                     | 81.38 | 5935.23 |   |   | 295.47 | .085 | .00    | 16323.93 | 1198.48 | .00    | -2.08  |        | .1811  | 42.389 | .0000  | .000  |
| 613.204                     | 81.34 | 5935.22 |   |   | 295.87 | .085 | .00    | 16330.17 | 1200.57 | .00    | -2.09  |        | .1811  | 42.280 | .0000  | .000  |





|         | SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DW/DOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | *SLOT<br>LB/SEC |
|---------|--------------------------------------|------------|-----------|-------------|-------------|---------------|------------------|---------------|--------------|---------------------|-----------------|
| FORWARD | 1.1676+C2                            | 8.2020+01  | 8.1917+01 | 5.9376+03   | 1.6218+02   | 1.6460+04     | 0.0000           | 0.0000        | 0.0000       | 0.0000              | 6.6745+02       |
| AFT     | 1.1677+C2                            | 8.1947+01  | 8.1845+01 | 5.9369+03   | 1.6231+02   | 1.6460+04     | 0.0000           | 0.0000        | 0.0000       | 0.0000              | 6.6747+02       |

GAS BUILDUP IN SLOT, DW/DT = -1.4229-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 4.2705+C2 | 8.1912+01 | 8.1740+01 | 5.9369+03 | 2.1033+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 8.5982+02 |
| AFT     | 4.2706+C2 | 8.1846+01 | 8.1674+01 | 5.9363+03 | 2.1040+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 8.5982+02 |

GAS BUILDUP IN SLOT, DW/DT = -1.4125-03

|         |           |           |           |           |           |           |        |        |        |        |           |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FORWARD | 7.4634+C2 | 8.1724+01 | 8.1377+01 | 5.9351+03 | 2.9948+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.2192+03 |
| AFT     | 7.4635+C2 | 8.1610+01 | 8.1263+01 | 5.9341+03 | 2.9985+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.2192+03 |

GAS BUILDUP IN SLOT, DW/DT = -1.4034-03

|                                      |                    |               |                |                    |            |              |         |        |        |
|--------------------------------------|--------------------|---------------|----------------|--------------------|------------|--------------|---------|--------|--------|
| WEB BURNOUT INCREMENT LOCATION =     | 90.0000            | SECTOR NO. =  | 2              | TAU =              | 43.3618    | TAUWDP =     | 43.3618 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 105.0000           | SECTOR NO. =  | 1              | TAU =              | 43.3126    | TAUWDP =     | 43.3126 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 105.0000           | SECTOR NO. =  | 2              | TAU =              | 43.3126    | TAUWDP =     | 43.3126 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 105.0000           | SECTOR NO. =  | 3              | TAU =              | 43.3126    | TAUWDP =     | 43.3126 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 131.7710           | SECTOR NO. =  | 1              | TAU =              | 43.3072    | TAUWDP =     | 43.3072 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 131.7710           | SECTOR NO. =  | 2              | TAU =              | 43.3072    | TAUWDP =     | 43.3072 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 131.7710           | SECTOR NO. =  | 3              | TAU =              | 43.3072    | TAUWDP =     | 43.3072 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 143.9190           | SECTOR NO. =  | 2              | TAU =              | 43.3340    | TAUWDP =     | 43.3340 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 143.9190           | SECTOR NO. =  | 3              | TAU =              | 43.3340    | TAUWDP =     | 43.3340 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 158.9190           | SECTOR NO. =  | 1              | TAU =              | 43.2258    | TAUWDP =     | 43.2258 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 158.9190           | SECTOR NO. =  | 4              | TAU =              | 43.2258    | TAUWDP =     | 43.2258 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 158.9190           | SECTOR NO. =  | 5              | TAU =              | 43.2258    | TAUWDP =     | 43.2258 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 158.9190           | SECTOR NO. =  | 6              | TAU =              | 43.1175    | TAUWDP =     | 43.1175 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 173.9190           | SECTOR NO. =  | 1              | TAU =              | 43.0389    | TAUWDP =     | 43.0389 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 508.2040           | SECTOR NO. =  | 2              | TAU =              | 43.0389    | TAUWDP =     | 43.0389 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 508.2040           | SECTOR NO. =  | 3              | TAU =              | 43.0389    | TAUWDP =     | 43.0389 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 508.2040           | SECTOR NO. =  | 4              | TAU =              | 43.0389    | TAUWDP =     | 43.0389 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 523.2040           | SECTOR NO. =  | 5              | TAU =              | 42.9305    | TAUWDP =     | 42.9305 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 523.2040           | SECTOR NO. =  | 6              | TAU =              | 42.9305    | TAUWDP =     | 42.9305 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 523.2040           | SECTOR NO. =  | 7              | TAU =              | 42.9305    | TAUWDP =     | 42.9305 | TIME = | 117.00 |
| WEB BURNOUT INCREMENT LOCATION =     | 523.2040           | SECTOR NO. =  | 8              | TAU =              | 42.9305    | TAUWDP =     | 42.9305 | TIME = | 117.00 |
| *PARTBN TIME=117.50 IS=2 ZCALC( 7)=  | 90.00 ZCALC( 6)=   | 75.00 AINCH=  | 88.35 AINCHI=  | 75.00 DELZ=13.350  | ALP=454.73 | ALPHI=454.54 |         |        |        |
| *PARTBN TIME=117.50 IS=3 ZCALC( 7)=  | 90.00 ZCALC( 6)=   | 75.00 AINCH=  | 91.12 AINCHI=  | 75.00 DELZ=16.124  | ALP=454.73 | ALPHI=454.49 |         |        |        |
| *PARTBN TIME=117.50 IS=1 ZCALC( 8)=  | 105.00 ZCALC( 7)=  | 90.00 AINCH=  | 103.39 AINCHI= | 90.00 DELZ=13.390  | ALP=454.74 | ALPHI=454.54 |         |        |        |
| *PARTBN TIME=117.50 IS=4 ZCALC( 8)=  | 105.00 ZCALC( 7)=  | 90.00 AINCH=  | 107.57 AINCHI= | 90.00 DELZ=17.571  | ALP=454.74 | ALPHI=454.47 |         |        |        |
| *PARTBN TIME=117.50 IS=1 ZCALC( 12)= | 143.92 ZCALC( 11)= | 131.77 AINCH= | 143.92 AINCHI= | 133.63 DELZ=10.291 | ALP=453.88 | ALPHI=453.80 |         |        |        |
| *PARTBN TIME=117.50 IS=4 ZCALC( 12)= | 143.92 ZCALC( 11)= | 131.77 AINCH= | 143.92 AINCHI= | 129.31 DELZ=14.606 | ALP=453.81 | ALPHI=453.51 |         |        |        |
| *PARTBN TIME=117.50 IS=1 ZCALC( 13)= | 158.92 ZCALC( 12)= | 143.92 AINCH= | 149.28 AINCHI= | 143.92 DELZ=4.278  | ALP=453.99 | ALPHI=453.88 |         |        |        |
| *PARTBN TIME=117.50 IS=4 ZCALC( 13)= | 158.92 ZCALC( 12)= | 143.92 AINCH= | 149.99 AINCHI= | 143.92 DELZ=6.071  | ALP=453.99 | ALPHI=453.81 |         |        |        |
| *PARTBN TIME=117.50 IS=5 ZCALC( 13)= | 158.92 ZCALC( 12)= | 143.92 AINCH= | 150.35 AINCHI= | 143.92 DELZ=14.436 | ALP=453.98 | ALPHI=453.46 |         |        |        |

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|         |             |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|---------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN | TIME=117.50 | IS=0 | ZCALC( 13)= | 158.92 | ZCALC( 12)= | 143.92 | AINCW= | 157.50 | AINCHI= | 143.92 | DELZ= | 13.583 | ALP= | 453.98 | ALPHI= | 453.50 |
| *PARTBN | TIME=117.50 | IS=6 | ZCALC( 14)= | 173.92 | ZCALC( 13)= | 158.92 | AINCW= | 160.87 | AINCHI= | 158.92 | DELZ= | 1.955  | ALP= | 453.98 | ALPHI= | 453.96 |
| *PARTBN | TIME=117.50 | IS=7 | ZCALC( 14)= | 173.92 | ZCALC( 13)= | 158.92 | AINCW= | 160.38 | AINCHI= | 158.92 | DELZ= | 1.461  | ALP= | 453.98 | ALPHI= | 453.98 |
| *PARTBN | TIME=117.50 | IS=1 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 459.87 | DELZ= | 3.337  | ALP= | 452.86 | ALPHI= | 370.40 |
| *PARTBN | TIME=117.50 | IS=2 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 460.48 | DELZ= | 2.721  | ALP= | 453.13 | ALPHI= | 385.89 |
| *PARTBN | TIME=117.50 | IS=3 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 465.37 | DELZ= | 2.836  | ALP= | 453.08 | ALPHI= | 383.00 |
| *PARTBN | TIME=117.50 | IS=4 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 459.70 | DELZ= | 3.508  | ALP= | 452.78 | ALPHI= | 366.10 |
| *PARTBN | TIME=117.50 | IS=5 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 458.90 | DELZ= | 4.303  | ALP= | 452.43 | ALPHI= | 348.12 |
| *PARTBN | TIME=117.50 | IS=6 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 458.66 | DELZ= | 4.543  | ALP= | 452.32 | ALPHI= | 340.10 |
| *PARTBN | TIME=117.50 | IS=7 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 458.71 | DELZ= | 4.496  | ALP= | 452.34 | ALPHI= | 341.27 |
| *PARTBN | TIME=117.50 | IS=8 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 458.98 | DELZ= | 4.222  | ALP= | 452.47 | ALPHI= | 348.17 |
| *PARTBN | TIME=117.50 | IS=2 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 494.51 | AINCHI= | 478.20 | DELZ= | 16.310 | ALP= | 454.22 | ALPHI= | 453.65 |
| *PARTBN | TIME=117.50 | IS=1 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 501.23 | AINCHI= | 493.20 | DELZ= | 8.028  | ALP= | 454.21 | ALPHI= | 453.96 |
| *PARTBN | TIME=117.50 | IS=3 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 495.76 | AINCHI= | 493.20 | DELZ= | 2.551  | ALP= | 454.22 | ALPHI= | 454.18 |
| *PARTBN | TIME=117.50 | IS=4 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 503.10 | AINCHI= | 493.20 | DELZ= | 9.894  | ALP= | 454.20 | ALPHI= | 453.88 |
| *PARTBN | TIME=117.50 | IS=5 | ZCALC( 40)= | 523.20 | ZCALC( 39)= | 508.20 | AINCW= | 511.81 | AINCHI= | 508.20 | DELZ= | 3.606  | ALP= | 454.18 | ALPHI= | 454.11 |
| *PARTBN | TIME=117.50 | IS=6 | ZCALC( 40)= | 523.20 | ZCALC( 39)= | 508.20 | AINCW= | 514.43 | AINCHI= | 508.20 | DELZ= | 6.223  | ALP= | 454.18 | ALPHI= | 454.00 |
| *PARTBN | TIME=117.50 | IS=7 | ZCALC( 40)= | 523.20 | ZCALC( 39)= | 508.20 | AINCW= | 513.91 | AINCHI= | 508.20 | DELZ= | 5.710  | ALP= | 454.18 | ALPHI= | 454.02 |
| *PARTBN | TIME=117.50 | IS=8 | ZCALC( 40)= | 523.20 | ZCALC( 39)= | 508.20 | AINCW= | 510.92 | AINCHI= | 508.20 | DELZ= | 2.715  | ALP= | 454.19 | ALPHI= | 454.14 |

|                       |            |          |            |   |       |         |          |         |        |        |
|-----------------------|------------|----------|------------|---|-------|---------|----------|---------|--------|--------|
| NEB BURNOUT INCREMENT | LOCATION = | 75.0000  | SECTOR NO. | 2 | TAU = | 43.4110 | TAUWDP = | 43.4110 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 75.0000  | SECTOR NO. | 3 | TAU = | 43.4110 | TAUWDP = | 43.4110 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 90.0000  | SECTOR NO. | 1 | TAU = | 43.3618 | TAUWDP = | 43.3618 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 90.0000  | SECTOR NO. | 3 | TAU = | 43.3618 | TAUWDP = | 43.3618 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 90.0000  | SECTOR NO. | 4 | TAU = | 43.3618 | TAUWDP = | 43.3618 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 105.0000 | SECTOR NO. | 4 | TAU = | 43.3126 | TAUWDP = | 43.3126 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 105.0000 | SECTOR NO. | 5 | TAU = | 43.3126 | TAUWDP = | 43.3126 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 105.0000 | SECTOR NO. | 6 | TAU = | 43.3126 | TAUWDP = | 43.3126 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 105.0000 | SECTOR NO. | 7 | TAU = | 43.3126 | TAUWDP = | 43.3126 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 105.0000 | SECTOR NO. | 8 | TAU = | 43.3126 | TAUWDP = | 43.3126 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 131.7710 | SECTOR NO. | 4 | TAU = | 43.3072 | TAUWDP = | 43.3072 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 131.7710 | SECTOR NO. | 5 | TAU = | 43.3072 | TAUWDP = | 43.3072 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 131.7710 | SECTOR NO. | 6 | TAU = | 43.3072 | TAUWDP = | 43.3072 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 131.7710 | SECTOR NO. | 7 | TAU = | 43.3072 | TAUWDP = | 43.3072 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 131.7710 | SECTOR NO. | 8 | TAU = | 43.3072 | TAUWDP = | 43.3072 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 143.9190 | SECTOR NO. | 1 | TAU = | 43.3340 | TAUWDP = | 43.3340 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 143.9190 | SECTOR NO. | 4 | TAU = | 43.3340 | TAUWDP = | 43.3340 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 158.9190 | SECTOR NO. | 6 | TAU = | 43.2258 | TAUWDP = | 43.2258 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 158.9190 | SECTOR NO. | 7 | TAU = | 43.2258 | TAUWDP = | 43.2258 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 493.2040 | SECTOR NO. | 1 | TAU = | 43.1473 | TAUWDP = | 43.1473 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 493.2040 | SECTOR NO. | 2 | TAU = | 43.1473 | TAUWDP = | 43.1473 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 493.2040 | SECTOR NO. | 3 | TAU = | 43.1473 | TAUWDP = | 43.1473 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 493.2040 | SECTOR NO. | 4 | TAU = | 43.1473 | TAUWDP = | 43.1473 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 508.2040 | SECTOR NO. | 5 | TAU = | 43.0389 | TAUWDP = | 43.0389 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 508.2040 | SECTOR NO. | 6 | TAU = | 43.0389 | TAUWDP = | 43.0389 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 508.2040 | SECTOR NO. | 7 | TAU = | 43.0389 | TAUWDP = | 43.0389 | TIME = | 117.50 |
| NEB BURNOUT INCREMENT | LOCATION = | 508.2040 | SECTOR NO. | 8 | TAU = | 43.0389 | TAUWDP = | 43.0389 | TIME = | 117.50 |

|         |             |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|---------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN | TIME=118.00 | IS=2 | ZCALC( 5)=  | 60.00  | ZCALC( 4)=  | 45.00  | AINCW= | 60.12  | AINCHI= | 45.00  | DELZ= | 15.118 | ALP= | 454.72 | ALPHI= | 454.49 |
| *PARTBN | TIME=118.00 | IS=3 | ZCALC( 5)=  | 60.00  | ZCALC( 4)=  | 45.00  | AINCW= | 62.87  | AINCHI= | 45.00  | DELZ= | 17.875 | ALP= | 454.72 | ALPHI= | 454.49 |
| *PARTBN | TIME=118.00 | IS=1 | ZCALC( 6)=  | 75.00  | ZCALC( 5)=  | 60.00  | AINCW= | 75.08  | AINCHI= | 60.00  | DELZ= | 15.083 | ALP= | 454.73 | ALPHI= | 454.50 |
| *PARTBN | TIME=118.00 | IS=4 | ZCALC( 7)=  | 90.00  | ZCALC( 6)=  | 75.00  | AINCW= | 79.26  | AINCHI= | 75.00  | DELZ= | 4.256  | ALP= | 454.73 | ALPHI= | 454.71 |
| *PARTBN | TIME=118.00 | IS=5 | ZCALC( 8)=  | 105.00 | ZCALC( 7)=  | 90.00  | AINCW= | 78.75  | AINCHI= | 90.00  | DELZ= | 8.751  | ALP= | 454.73 | ALPHI= | 454.63 |
| *PARTBN | TIME=118.00 | IS=6 | ZCALC( 8)=  | 105.00 | ZCALC( 7)=  | 90.00  | AINCW= | 104.64 | AINCHI= | 90.00  | DELZ= | 14.638 | ALP= | 454.74 | ALPHI= | 454.52 |
| *PARTBN | TIME=118.00 | IS=7 | ZCALC( 8)=  | 105.00 | ZCALC( 7)=  | 90.00  | AINCW= | 103.49 | AINCHI= | 90.00  | DELZ= | 13.486 | ALP= | 454.74 | ALPHI= | 454.54 |
| *PARTBN | TIME=118.00 | IS=8 | ZCALC( 8)=  | 105.00 | ZCALC( 7)=  | 90.00  | AINCW= | 96.76  | AINCHI= | 90.00  | DELZ= | 6.762  | ALP= | 454.73 | ALPHI= | 454.67 |
| *PARTBN | TIME=118.00 | IS=5 | ZCALC( 12)= | 143.92 | ZCALC( 11)= | 131.77 | AINCW= | 143.92 | AINCHI= | 138.40 | DELZ= | 5.522  | ALP= | 453.97 | ALPHI= | 269.30 |
| *PARTBN | TIME=118.00 | IS=6 | ZCALC( 12)= | 143.92 | ZCALC( 11)= | 131.77 | AINCW= | 143.92 | AINCHI= | 132.32 | DELZ= | 11.598 | ALP= | 453.86 | ALPHI= | 66.08  |

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|          |             |      |             |        |             |        |        |        |         |        |       |        |      |        |        |        |
|----------|-------------|------|-------------|--------|-------------|--------|--------|--------|---------|--------|-------|--------|------|--------|--------|--------|
| *PARTBN* | TIME=118.00 | IS=7 | ZCALC( 81)= | 105.00 | ZCALC( 71)= | 90.00  | AINCW= | 103.49 | AINCHI= | 93.00  | DELZ= | 13.486 | ALP= | 454.74 | ALPHI= | 454.54 |
| *PARTBN* | TIME=118.00 | IS=8 | ZCALC( 81)= | 105.00 | ZCALC( 71)= | 90.00  | AINCW= | 96.76  | AINCHI= | 93.00  | DELZ= | 6.762  | ALP= | 454.73 | ALPHI= | 454.67 |
| *PARTBN* | TIME=118.00 | IS=5 | ZCALC( 12)= | 143.92 | ZCALC( 11)= | 131.77 | AINCW= | 143.92 | AINCHI= | 138.40 | DELZ= | 5.522  | ALP= | 453.97 | ALPHI= | 269.30 |
| *PARTBN* | TIME=118.00 | IS=6 | ZCALC( 12)= | 143.92 | ZCALC( 11)= | 131.77 | AINCW= | 143.92 | AINCHI= | 132.32 | DELZ= | 11.598 | ALP= | 453.86 | ALPHI= | 66.08  |
| *PARTBN* | TIME=118.00 | IS=7 | ZCALC( 12)= | 143.92 | ZCALC( 11)= | 131.77 | AINCW= | 143.92 | AINCHI= | 133.51 | DELZ= | 10.408 | ALP= | 453.88 | ALPHI= | 105.88 |
| *PARTBN* | TIME=118.00 | IS=5 | ZCALC( 13)= | 158.92 | ZCALC( 12)= | 143.92 | AINCW= | 146.22 | AINCHI= | 143.92 | DELZ= | 2.296  | ALP= | 454.00 | ALPHI= | 453.97 |
| *PARTBN* | TIME=118.00 | IS=6 | ZCALC( 13)= | 158.92 | ZCALC( 12)= | 143.92 | AINCW= | 148.74 | AINCHI= | 143.92 | DELZ= | 4.821  | ALP= | 453.99 | ALPHI= | 453.86 |
| *PARTBN* | TIME=118.00 | IS=7 | ZCALC( 13)= | 158.92 | ZCALC( 12)= | 143.92 | AINCW= | 148.25 | AINCHI= | 143.92 | DELZ= | 4.326  | ALP= | 453.99 | ALPHI= | 453.86 |
| *PARTBN* | TIME=118.00 | IS=1 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 461.03 | DELZ= | 2.176  | ALP= | 453.38 | ALPHI= | 399.61 |
| *PARTBN* | TIME=118.00 | IS=2 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 461.65 | DELZ= | 1.559  | ALP= | 453.66 | ALPHI= | 415.11 |
| *PARTBN* | TIME=118.00 | IS=3 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 461.53 | DELZ= | 1.673  | ALP= | 453.61 | ALPHI= | 412.23 |
| *PARTBN* | TIME=118.00 | IS=4 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 462.86 | DELZ= | 2.347  | ALP= | 453.31 | ALPHI= | 395.29 |
| *PARTBN* | TIME=118.00 | IS=5 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 462.06 | DELZ= | 3.144  | ALP= | 452.95 | ALPHI= | 375.26 |
| *PARTBN* | TIME=118.00 | IS=6 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 459.82 | DELZ= | 3.384  | ALP= | 452.84 | ALPHI= | 369.23 |
| *PARTBN* | TIME=118.00 | IS=7 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 459.87 | DELZ= | 3.337  | ALP= | 452.86 | ALPHI= | 370.40 |
| *PARTBN* | TIME=118.00 | IS=8 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCHI= | 460.14 | DELZ= | 3.062  | ALP= | 452.99 | ALPHI= | 377.31 |
| *PARTBN* | TIME=118.00 | IS=1 | ZCALC( 37)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 488.55 | AINCHI= | 478.20 | DELZ= | 10.344 | ALP= | 454.24 | ALPHI= | 453.90 |
| *PARTBN* | TIME=118.00 | IS=2 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 481.82 | AINCHI= | 478.20 | DELZ= | 3.617  | ALP= | 454.26 | ALPHI= | 454.18 |
| *PARTBN* | TIME=118.00 | IS=3 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 483.36 | AINCHI= | 478.20 | DELZ= | 4.860  | ALP= | 454.25 | ALPHI= | 454.12 |
| *PARTBN* | TIME=118.00 | IS=4 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 490.42 | AINCHI= | 478.20 | DELZ= | 12.212 | ALP= | 454.23 | ALPHI= | 453.82 |
| *PARTBN* | TIME=118.00 | IS=5 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 499.14 | AINCHI= | 493.20 | DELZ= | 5.933  | ALP= | 454.21 | ALPHI= | 454.05 |
| *PARTBN* | TIME=118.00 | IS=6 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 501.76 | AINCHI= | 493.20 | DELZ= | 8.555  | ALP= | 454.21 | ALPHI= | 453.94 |
| *PARTBN* | TIME=118.00 | IS=7 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 501.25 | AINCHI= | 493.20 | DELZ= | 8.041  | ALP= | 454.21 | ALPHI= | 453.96 |
| *PARTBN* | TIME=118.00 | IS=8 | ZCALC( 39)= | 508.20 | ZCALC( 38)= | 493.20 | AINCW= | 498.25 | AINCHI= | 493.20 | DELZ= | 5.042  | ALP= | 454.22 | ALPHI= | 454.06 |

IGNITION TIME, TIME (S)

118.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>Motor Parameters:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 820333.66     | 184418.34    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 825224.81     | 185517.92    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 6554.3749     | 1473.4821    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDT                | .12326469+10  | .27711006+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 254.11557     | 254.11557    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .12826684+10  | .28835532+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6283304     | 1.6283304    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 327.62893     | 722.29816    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 535081.67     | 1113514.5    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | 3.5176854     | 7.7551689    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 18.402545     | 40.570668    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | 35.873749     | 55604.422    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 2.8570734     | 174349.32    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 1576.3757     | 3475.3136    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 115.60439     | 254.86465    |
| RATIO OF SPECIFIC HEATS                    | GAHA                 | 1.1591842     | 1.1591842    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.696788     | 27.991627    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1547.2440     | 5076.2600    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .94296186-01  | .94296186-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 32067681.     | 46.510240    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .53241369+11  | 77220.077    |
| BURN AREA (M**2,IN**2)                     | AHH                  | .45720980     | 708.67661    |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .37896150-02  | .14919747    |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.1635960     | 43.440739    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .22474507     | 13714.786    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.879087     | 3348927.3    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3291.6091     | 5924.8964    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| RADIAL BURN AREA (M**2,IN**2)              | ABCYL                | 35.416539     | 54895.746    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLT                | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 2.6303621     | 160514.54    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 283.13935     | 17270223.    |
| <b>AFT END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 31630189.     | 45.875711    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .50827743+11  | 73719.409    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(1)+1,1)          | .37592888-02  | .14803350    |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(1)+2,1)          | .37559289-02  | .14787122    |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(1)+1,1)         | .74828400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(1)+2,1)         | .52501800     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(1)+2,3)         | 3291.4789     | 5924.6619    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.6022414     | 2483.4792    |
| EXPANSION RATIO                            | EPR                  | 6.7084240     | 6.7084240    |
| PRESSURE RATIO                             | PEPO                 | .23576823-01  | .23576823-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLUPS               | 3.0000000     | 3.0000000    |

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INCREMENT DIVIDING PLANE DATA;

| MASS<br>ADDITION<br>REGIONS | PO    | P     | T       | U      | M    | LP     | AP       | WDOT   | DWDOT  | OW/DT  | Rθ     | TAU    | RθTO   | TAUTO |
|-----------------------------|-------|-------|---------|--------|------|--------|----------|--------|--------|--------|--------|--------|--------|-------|
|                             | PSIA  | PSIA  | DEG. R  | FT/SEC |      | INCHES | SQ. IN.  | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.    | IN/SEC | IN.   |
| FUNE                        | 46.51 | 46.51 | 5924.90 | 16.14  | .005 | 453.28 | 16349.56 | 37.52  | 6.69   | -30.83 | .1488  | 43.449 | .0000  | .000  |
| 15.000                      | 46.51 | 46.51 | 5924.83 | 44.70  | .013 | 453.46 | 16364.28 | 103.96 | 64.19  | -2.25  | .1480  | 43.399 | .0000  | .000  |
| 35.000                      | 46.51 | 46.49 | 5924.70 | 73.23  | .021 | 453.75 | 16378.97 | 170.45 | 64.23  | -2.25  | .1488  | 43.395 | .0000  | .000  |
| 45.000                      | 46.50 | 46.48 | 5924.51 | 101.77 | .029 | 454.03 | 16393.63 | 236.98 | 64.28  | -2.25  | .1488  | 43.391 | .0000  | .000  |
| 65.000                      | 46.49 | 46.45 | 5924.24 | 130.96 | .037 | 454.31 | 16408.56 | 305.09 | 65.94  | -2.17  | .1488  | 43.386 | .0000  | .000  |
| 75.000                      | 46.48 | 46.43 | 5924.01 | 152.56 | .044 | 454.83 | 16422.85 | 355.54 | 48.19  | -2.26  | .1488  | 43.371 | .0000  | .000  |
| 95.000                      | 46.47 | 46.41 | 5923.81 | 168.23 | .048 | 284.14 | 16436.32 | 392.18 | 34.32  | -2.32  | .1488  | 43.346 | .0000  | .000  |
| 105.000                     | 46.46 | 46.39 | 5923.67 | 179.13 | .051 | 227.37 | 16449.61 | 417.87 | 23.30  | -2.39  | .1488  | 43.313 | .0000  | .000  |
| 116.761                     | 46.46 | 46.39 | 5923.66 | 179.74 | .051 | .00    | 16463.29 | 419.65 | .00    | -1.78  | .1488  | 43.366 | .0000  | .000  |
| 116.771                     | 46.46 | 46.34 | 5922.85 | 230.85 | .066 | .00    | 12831.49 | 419.65 | .00    | .00    | .1487  | 43.274 | .0000  | .000  |
| 131.771                     | 46.43 | 46.34 | 5923.35 | 260.89 | .058 | .00    | 14813.33 | 421.55 | .00    | -1.90  | .1487  | 43.307 | .0000  | .000  |
| 143.919                     | 46.41 | 46.33 | 5923.57 | 186.26 | .053 | 170.21 | 16420.60 | 432.71 | 9.39   | -1.86  | .1487  | 43.323 | .0000  | .000  |
| 153.919                     | 46.41 | 46.33 | 5923.52 | 189.57 | .054 | 170.25 | 16429.03 | 441.05 | 6.10   | -2.25  | .1487  | 43.226 | .0000  | .000  |
| 173.919                     | 46.41 | 46.33 | 5923.51 | 190.36 | .054 | .00    | 15444.32 | 443.31 | .00    | -2.25  | .1487  | 43.110 | .0000  | .000  |
| 183.919                     | 46.41 | 46.33 | 5923.49 | 191.19 | .055 | .00    | 16456.06 | 445.56 | .00    | -2.25  | .1487  | 43.009 | .0000  | .000  |
| 213.919                     | 46.41 | 46.33 | 5923.48 | 192.02 | .055 | .00    | 16467.74 | 447.81 | .00    | -2.25  | .1487  | 42.901 | .0000  | .000  |
| 218.919                     | 46.41 | 46.33 | 5923.47 | 192.85 | .055 | .00    | 16479.34 | 450.07 | .00    | -2.26  | .1487  | 42.793 | .0000  | .000  |
| 233.919                     | 46.41 | 46.33 | 5923.46 | 193.68 | .055 | .00    | 16490.87 | 452.33 | .00    | -2.26  | .1487  | 42.685 | .0000  | .000  |
| 243.919                     | 46.41 | 46.33 | 5923.44 | 194.51 | .056 | .00    | 16502.32 | 454.59 | .00    | -2.26  | .1487  | 42.576 | .0000  | .000  |
| 263.919                     | 46.41 | 46.33 | 5923.43 | 195.35 | .056 | .00    | 16513.71 | 456.85 | .00    | -2.26  | .1487  | 42.468 | .0000  | .000  |
| 273.919                     | 46.41 | 46.33 | 5923.42 | 196.18 | .056 | .00    | 16525.02 | 459.12 | .00    | -2.27  | .1487  | 42.360 | .0000  | .000  |
| 283.919                     | 46.41 | 46.33 | 5923.41 | 197.01 | .056 | .00    | 16536.26 | 461.39 | .00    | -2.27  | .1487  | 42.252 | .0000  | .000  |
| 303.919                     | 46.41 | 46.33 | 5923.39 | 197.85 | .057 | .00    | 16547.43 | 463.65 | .00    | -2.27  | .1487  | 42.143 | .0000  | .000  |
| 323.919                     | 46.41 | 46.33 | 5923.38 | 198.68 | .057 | .00    | 16558.52 | 465.93 | .00    | -2.27  | .1487  | 42.035 | .0000  | .000  |
| 333.919                     | 46.42 | 46.33 | 5923.37 | 199.52 | .057 | .00    | 16569.54 | 468.20 | .00    | -2.27  | .1487  | 41.927 | .0000  | .000  |
| 353.919                     | 46.42 | 46.33 | 5923.36 | 200.36 | .057 | .00    | 16580.49 | 470.47 | .00    | -2.28  | .1487  | 41.819 | .0000  | .000  |
| 363.919                     | 46.42 | 46.33 | 5923.34 | 201.20 | .058 | .00    | 16591.37 | 472.75 | .00    | -2.28  | .1487  | 41.710 | .0000  | .000  |
| 383.919                     | 46.42 | 46.33 | 5923.33 | 202.03 | .058 | .00    | 16602.14 | 475.03 | .00    | -2.28  | .1487  | 41.602 | .0000  | .000  |
| 393.919                     | 46.42 | 46.33 | 5923.32 | 202.87 | .058 | .00    | 16612.91 | 477.31 | .00    | -2.28  | .1487  | 41.494 | .0000  | .000  |
| 403.919                     | 46.42 | 46.33 | 5923.31 | 203.10 | .058 | .00    | 16615.85 | 477.94 | .00    | -2.28  | .1487  | 41.454 | .0000  | .000  |
| 413.919                     | 46.42 | 46.33 | 5923.27 | 205.89 | .059 | .00    | 16629.13 | 480.21 | .00    | -2.27  | .1487  | 41.192 | .0000  | .000  |
| 427.051                     | 46.42 | 46.33 | 5923.24 | 207.56 | .059 | .00    | 16631.95 | 481.57 | .00    | -1.35  | .1487  | 41.174 | .0000  | .000  |
| 427.061                     | 46.42 | 46.29 | 5922.65 | 241.88 | .069 | .00    | 14067.75 | 481.57 | .00    | .00    | .1486  | 41.029 | .0000  | .000  |
| 442.061                     | 46.41 | 46.29 | 5922.90 | 228.37 | .065 | .00    | 14981.74 | 483.56 | .00    | -1.99  | .1486  | 41.998 | .0000  | .000  |
| 457.061                     | 46.39 | 46.29 | 5923.12 | 215.31 | .062 | .00    | 15939.50 | 485.67 | .00    | -2.11  | .1486  | 42.967 | .0000  | .000  |
| 463.204                     | 46.38 | 46.28 | 5923.12 | 214.81 | .062 | 453.20 | 16344.51 | 496.77 | 10.26  | -2.23  | .1485  | 43.179 | .0000  | .000  |
| 470.204                     | 46.36 | 46.23 | 5922.61 | 243.73 | .070 | 453.72 | 16346.47 | 563.12 | 64.12  | -2.23  | .1486  | 43.158 | .0000  | .000  |
| 493.204                     | 46.34 | 46.19 | 5922.17 | 265.96 | .076 | 454.13 | 16348.45 | 614.01 | 48.69  | -2.29  | .1486  | 43.125 | .0000  | .000  |
| 508.204                     | 46.33 | 46.17 | 5922.02 | 273.35 | .078 | 227.11 | 16349.51 | 630.92 | 14.68  | -2.23  | .1485  | 43.039 | .0000  | .000  |
| 523.204                     | 46.34 | 46.17 | 5922.00 | 274.27 | .079 | .00    | 16352.21 | 633.14 | .00    | -2.22  | .1485  | 42.931 | .0000  | .000  |
| 538.204                     | 46.34 | 46.17 | 5921.98 | 275.20 | .079 | .00    | 16354.09 | 635.37 | .00    | -2.22  | .1485  | 42.822 | .0000  | .000  |
| 553.204                     | 46.34 | 46.17 | 5921.96 | 276.13 | .079 | .00    | 16355.94 | 637.59 | .00    | -2.23  | .1485  | 42.714 | .0000  | .000  |
| 568.204                     | 46.34 | 46.17 | 5921.94 | 277.06 | .079 | .00    | 16357.77 | 639.82 | .00    | -2.23  | .1485  | 42.605 | .0000  | .000  |
| 583.204                     | 46.34 | 46.17 | 5921.92 | 278.00 | .080 | .00    | 16359.57 | 642.05 | .00    | -2.23  | .1485  | 42.497 | .0000  | .000  |
| 593.204                     | 46.34 | 46.17 | 5921.90 | 278.93 | .080 | .00    | 16361.33 | 644.28 | .00    | -2.23  | .1485  | 42.389 | .0000  | .000  |
| 613.204                     | 46.34 | 46.17 | 5921.88 | 279.87 | .080 | .00    | 16363.13 | 646.51 | .00    | -2.23  | .1485  | 42.280 | .0000  | .000  |



DATE 071076

|          |       |       |         |        |      |     |          |        |     |       |       |        |       |      |
|----------|-------|-------|---------|--------|------|-----|----------|--------|-----|-------|-------|--------|-------|------|
| 628.204  | 46.34 | 46.17 | 5921.06 | 283.80 | .080 | .00 | 16364.87 | 648.74 | .00 | -2.23 | .1485 | 42.172 | .0000 | .000 |
| 643.204  | 46.34 | 46.17 | 5921.04 | 281.74 | .081 | .00 | 16366.59 | 650.97 | .00 | -2.23 | .1485 | 42.064 | .0000 | .000 |
| 658.204  | 46.35 | 46.17 | 5921.02 | 282.67 | .081 | .00 | 16368.29 | 653.21 | .00 | -2.23 | .1485 | 41.955 | .0000 | .000 |
| 673.204  | 46.35 | 46.17 | 5921.00 | 283.61 | .081 | .00 | 16369.97 | 655.44 | .00 | -2.23 | .1485 | 41.847 | .0000 | .000 |
| 688.204  | 46.35 | 46.17 | 5921.78 | 284.55 | .081 | .00 | 16371.63 | 657.67 | .00 | -2.24 | .1485 | 41.738 | .0000 | .000 |
| 703.204  | 46.35 | 46.17 | 5921.76 | 285.48 | .082 | .00 | 16373.26 | 659.91 | .00 | -2.24 | .1485 | 41.630 | .0000 | .000 |
| 718.204  | 46.35 | 46.17 | 5921.74 | 286.42 | .082 | .00 | 16374.88 | 662.15 | .00 | -2.24 | .1485 | 41.522 | .0000 | .000 |
| 733.204  | 46.35 | 46.17 | 5921.72 | 287.35 | .082 | .00 | 16376.51 | 664.39 | .00 | -1.19 | .1485 | 41.414 | .0000 | .000 |
| 748.204  | 46.35 | 46.17 | 5921.70 | 288.28 | .082 | .00 | 16378.14 | 666.63 | .00 | -2.24 | .1485 | 41.306 | .0000 | .000 |
| 763.204  | 46.35 | 46.17 | 5921.68 | 289.21 | .082 | .00 | 16379.77 | 668.87 | .00 | -1.77 | .1485 | 41.198 | .0000 | .000 |
| 778.204  | 46.35 | 46.17 | 5921.66 | 290.14 | .082 | .00 | 16381.40 | 671.11 | .00 |       |       |        |       |      |
| 793.204  | 46.35 | 46.17 | 5921.64 | 291.07 | .082 | .00 | 16383.03 | 673.35 | .00 |       |       |        |       |      |
| 808.204  | 46.35 | 46.17 | 5921.62 | 292.00 | .082 | .00 | 16384.66 | 675.59 | .00 |       |       |        |       |      |
| 823.204  | 46.35 | 46.17 | 5921.60 | 292.93 | .082 | .00 | 16386.29 | 677.83 | .00 |       |       |        |       |      |
| 838.204  | 46.35 | 46.17 | 5921.58 | 293.86 | .082 | .00 | 16387.92 | 680.07 | .00 |       |       |        |       |      |
| 853.204  | 46.35 | 46.17 | 5921.56 | 294.79 | .082 | .00 | 16389.55 | 682.31 | .00 |       |       |        |       |      |
| 868.204  | 46.35 | 46.17 | 5921.54 | 295.72 | .082 | .00 | 16391.18 | 684.55 | .00 |       |       |        |       |      |
| 883.204  | 46.35 | 46.17 | 5921.52 | 296.65 | .082 | .00 | 16392.81 | 686.79 | .00 |       |       |        |       |      |
| 898.204  | 46.35 | 46.17 | 5921.50 | 297.58 | .082 | .00 | 16394.44 | 689.03 | .00 |       |       |        |       |      |
| 913.204  | 46.35 | 46.17 | 5921.48 | 298.51 | .082 | .00 | 16396.07 | 691.27 | .00 |       |       |        |       |      |
| 928.204  | 46.35 | 46.17 | 5921.46 | 299.44 | .082 | .00 | 16397.70 | 693.51 | .00 |       |       |        |       |      |
| 943.204  | 46.35 | 46.17 | 5921.44 | 300.37 | .082 | .00 | 16399.33 | 695.75 | .00 |       |       |        |       |      |
| 958.204  | 46.35 | 46.17 | 5921.42 | 301.30 | .082 | .00 | 16400.96 | 697.99 | .00 |       |       |        |       |      |
| 973.204  | 46.35 | 46.17 | 5921.40 | 302.23 | .082 | .00 | 16402.59 | 700.23 | .00 |       |       |        |       |      |
| 988.204  | 46.35 | 46.17 | 5921.38 | 303.16 | .082 | .00 | 16404.22 | 702.47 | .00 |       |       |        |       |      |
| 1003.204 | 46.35 | 46.17 | 5921.36 | 304.09 | .082 | .00 | 16405.85 | 704.71 | .00 |       |       |        |       |      |
| 1018.204 | 46.35 | 46.17 | 5921.34 | 305.02 | .082 | .00 | 16407.48 | 706.95 | .00 |       |       |        |       |      |
| 1033.204 | 46.35 | 46.17 | 5921.32 | 305.95 | .082 | .00 | 16409.11 | 709.19 | .00 |       |       |        |       |      |
| 1048.204 | 46.35 | 46.17 | 5921.30 | 306.88 | .082 | .00 | 16410.74 | 711.43 | .00 |       |       |        |       |      |
| 1063.204 | 46.35 | 46.17 | 5921.28 | 307.81 | .082 | .00 | 16412.37 | 713.67 | .00 |       |       |        |       |      |
| 1078.204 | 46.35 | 46.17 | 5921.26 | 308.74 | .082 | .00 | 16414.00 | 715.91 | .00 |       |       |        |       |      |
| 1093.204 | 46.35 | 46.17 | 5921.24 | 309.67 | .082 | .00 | 16415.63 | 718.15 | .00 |       |       |        |       |      |
| 1108.204 | 46.35 | 46.17 | 5921.22 | 310.60 | .082 | .00 | 16417.26 | 720.39 | .00 |       |       |        |       |      |
| 1123.204 | 46.35 | 46.17 | 5921.20 | 311.53 | .082 | .00 | 16418.89 | 722.63 | .00 |       |       |        |       |      |
| 1138.204 | 46.35 | 46.17 | 5921.18 | 312.46 | .082 | .00 | 16420.52 | 724.87 | .00 |       |       |        |       |      |
| 1153.204 | 46.35 | 46.17 | 5921.16 | 313.39 | .082 | .00 | 16422.15 | 727.11 | .00 |       |       |        |       |      |
| 1168.204 | 46.35 | 46.17 | 5921.14 | 314.32 | .082 | .00 | 16423.78 | 729.35 | .00 |       |       |        |       |      |
| 1183.204 | 46.35 | 46.17 | 5921.12 | 315.25 | .082 | .00 | 16425.41 | 731.59 | .00 |       |       |        |       |      |
| 1198.204 | 46.35 | 46.17 | 5921.10 | 316.18 | .082 | .00 | 16427.04 | 733.83 | .00 |       |       |        |       |      |
| 1213.204 | 46.35 | 46.17 | 5921.08 | 317.11 | .082 | .00 | 16428.67 | 736.07 | .00 |       |       |        |       |      |
| 1228.204 | 46.35 | 46.17 | 5921.06 | 318.04 | .082 | .00 | 16430.30 | 738.31 | .00 |       |       |        |       |      |
| 1243.204 | 46.35 | 46.17 | 5921.04 | 318.97 | .082 | .00 | 16431.93 | 740.55 | .00 |       |       |        |       |      |
| 1258.204 | 46.35 | 46.17 | 5921.02 | 319.90 | .082 | .00 | 16433.56 | 742.79 | .00 |       |       |        |       |      |
| 1273.204 | 46.35 | 46.17 | 5921.00 | 320.83 | .082 | .00 | 16435.19 | 745.03 | .00 |       |       |        |       |      |
| 1288.204 | 46.35 | 46.17 | 5920.98 | 321.76 | .082 | .00 | 16436.82 | 747.27 | .00 |       |       |        |       |      |
| 1303.204 | 46.35 | 46.17 | 5920.96 | 322.69 | .082 | .00 | 16438.45 | 749.51 | .00 |       |       |        |       |      |
| 1318.204 | 46.35 | 46.17 | 5920.94 | 323.62 | .082 | .00 | 16440.08 | 751.75 | .00 |       |       |        |       |      |
| 1333.204 | 46.35 | 46.17 | 5920.92 | 324.55 | .082 | .00 | 16441.71 | 753.99 | .00 |       |       |        |       |      |
| 1348.204 | 46.35 | 46.17 | 5920.90 | 325.48 | .082 | .00 | 16443.34 | 756.23 | .00 |       |       |        |       |      |
| 1363.204 | 46.35 | 46.17 | 5920.88 | 326.41 | .082 | .00 | 16444.97 | 758.47 | .00 |       |       |        |       |      |
| 1378.204 | 46.35 | 46.17 | 5920.86 | 327.34 | .082 | .00 | 16446.60 | 760.71 | .00 |       |       |        |       |      |
| 1393.204 | 46.35 | 46.17 | 5920.84 | 328.27 | .082 | .00 | 16448.23 | 762.95 | .00 |       |       |        |       |      |
| 1408.204 | 46.35 | 46.17 | 5920.82 | 329.20 | .082 | .00 | 16449.86 | 765.19 | .00 |       |       |        |       |      |
| 1423.204 | 46.35 | 46.17 | 5920.80 | 330.13 | .082 | .00 | 16451.49 | 767.43 | .00 |       |       |        |       |      |
| 1438.204 | 46.35 | 46.17 | 5920.78 | 331.06 | .082 | .00 | 16453.12 | 769.67 | .00 |       |       |        |       |      |
| 1453.204 | 46.35 | 46.17 | 5920.76 | 331.99 | .082 | .00 | 16454.75 | 771.91 | .00 |       |       |        |       |      |
| 1468.204 | 46.35 | 46.17 | 5920.74 | 332.92 | .082 | .00 | 16456.38 | 774.15 | .00 |       |       |        |       |      |
| 1483.204 | 46.35 | 46.17 | 5920.72 | 333.85 | .082 | .00 | 16458.01 | 776.39 | .00 |       |       |        |       |      |
| 1498.204 | 46.35 | 46.17 | 5920.70 | 334.78 | .082 | .00 | 16459.64 | 778.63 | .00 |       |       |        |       |      |
| 1513.204 | 46.35 | 46.17 | 5920.68 | 335.71 | .082 | .00 | 16461.27 | 780.87 | .00 |       |       |        |       |      |
| 1528.204 | 46.35 | 46.17 | 5920.66 | 336.64 | .082 | .00 | 16462.90 | 783.11 | .00 |       |       |        |       |      |
| 1543.204 | 46.35 | 46.17 | 5920.64 | 337.57 | .082 | .00 | 16464.53 | 785.35 | .00 |       |       |        |       |      |
| 1558.204 | 46.35 | 46.17 | 5920.62 | 338.50 | .082 | .00 | 16466.16 | 787.59 | .00 |       |       |        |       |      |
| 1573.204 | 46.35 | 46.17 | 5920.60 | 339.43 | .082 | .00 | 16467.79 | 789.83 | .00 |       |       |        |       |      |
| 1588.204 | 46.35 | 46.17 | 5920.58 | 340.36 | .082 | .00 | 16469.42 | 792.07 | .00 |       |       |        |       |      |
| 1603.204 | 46.35 | 46.17 | 5920.56 | 341.29 | .082 | .00 | 16471.05 | 794.31 | .00 |       |       |        |       |      |
| 1618.204 | 46.35 | 46.17 | 5920.54 | 342.22 | .082 | .00 | 16472.68 | 796.55 | .00 |       |       |        |       |      |
| 1633.204 | 46.35 | 46.17 | 5920.52 | 343.15 | .082 | .00 | 16474.31 | 798.79 | .00 |       |       |        |       |      |
| 1648.204 | 46.35 | 46.17 | 5920.50 | 344.08 | .082 | .00 | 16475.94 | 801.03 | .00 |       |       |        |       |      |
| 1663.204 | 46.35 | 46.17 | 5920.48 | 345.01 | .082 | .00 | 16477.57 | 803.27 | .00 |       |       |        |       |      |
| 1678.204 | 46.35 | 46.17 | 5920.46 | 345.94 | .082 | .00 | 16479.20 | 805.51 | .00 |       |       |        |       |      |
| 1693.204 | 46.35 | 46.17 | 5920.44 | 346.87 | .082 | .00 | 16480.83 | 807.75 | .00 |       |       |        |       |      |
| 1708.204 | 46.35 | 46.17 | 5920.42 | 347.80 | .082 | .00 | 16482.46 | 809.99 | .00 |       |       |        |       |      |
| 1723.204 | 46.35 | 46.17 | 5920.40 | 348.73 | .082 | .00 | 16484.09 | 812.23 | .00 |       |       |        |       |      |
| 1738.204 | 46.35 | 46.17 | 5920.38 | 349.66 | .082 | .00 | 16485.72 | 814.47 | .00 |       |       |        |       |      |
| 1753.204 | 46.35 | 46.17 | 5920.36 | 350.59 | .082 | .00 | 16487.35 | 816.71 | .00 |       |       |        |       |      |
| 1768.204 | 46.35 | 46.17 | 5920.34 | 351.52 | .082 | .00 | 16488.98 | 818.95 | .00 |       |       |        |       |      |
| 1783.204 | 46.35 | 46.17 | 5920.32 | 352.45 | .082 | .00 | 16490.61 | 821.19 | .00 |       |       |        |       |      |
| 1798.204 | 46.35 | 46.17 | 5920.30 | 353.38 | .082 | .00 | 16492.24 | 823.43 | .00 |       |       |        |       |      |
| 1813.204 | 46.35 | 46.17 | 5920.28 | 354.31 | .082 | .00 | 16493.87 | 825.67 | .00 |       |       |        |       |      |
| 1828.204 | 46.35 | 46.17 | 5920.26 | 355.24 | .082 | .00 | 16495.50 | 827.91 | .00 |       |       |        |       |      |
| 1843.204 | 46.35 | 46.17 | 5920.24 | 356.17 | .082 | .00 | 16497.13 | 830.15 | .00 |       |       |        |       |      |
| 1858.204 | 46.35 | 46.17 | 5920.22 | 357.10 | .082 | .00 | 16498.76 | 832.39 | .00 |       |       |        |       |      |
| 1873.204 | 46.35 | 46.17 | 5920.20 | 358.03 | .082 | .00 | 16500.39 | 834.63 | .00 |       |       |        |       |      |
| 1888.204 | 46.35 | 46.17 | 5920.18 | 358.96 | .082 | .00 | 16502.02 | 836.87 | .00 |       |       |        |       |      |
| 1903.204 | 46.35 | 46.17 | 5920.16 | 359.89 | .082 | .00 | 16503.65 | 839.11 | .00 |       |       |        |       |      |
| 1918.204 | 46.35 | 46.17 | 5920.14 | 360.82 | .082 | .00 | 16505.28 | 841.35 | .00 |       |       |        |       |      |
| 1933.204 | 46.35 | 46.17 | 5920.12 | 361.75 | .082 | .00 | 16506.91 | 843.59 | .00 |       |       |        |       |      |
| 1948.204 | 46.35 | 46.17 | 5920.10 | 362.68 | .082 | .00 | 16508.54 | 845.83 | .00 |       |       |        |       |      |
| 1963.204 | 46.35 | 46.17 | 5920.08 | 363.61 | .082 | .00 | 16510.17 | 848.07 | .00 |       |       |        |       |      |
| 1978.204 | 46.35 | 46.17 | 5920.06 | 364.54 | .082 | .00 | 16511.80 | 850.31 | .00 |       |       |        |       |      |
| 1993.204 | 46.35 | 46.17 | 5920.04 | 365.47 | .082 | .00 | 16513.43 | 852.55 | .00 |       |       |        |       |      |
| 2008.204 | 46.35 | 46.17 | 5920.02 | 366.40 | .082 | .00 | 16515.06 | 854.79 | .00 |       |       |        |       |      |
| 2023.204 | 46.35 | 46.17 | 5920.00 | 367.33 | .082 | .00 | 16516.69 | 857.03 | .00 |       |       |        |       |      |
| 2038.204 | 46.35 | 46.17 | 5920.00 | 368.26 | .082 | .00 | 16518.32 | 859.27 | .00 |       |       |        |       |      |
| 2053.204 | 46.35 | 46.17 | 5920.00 | 369.19 | .082 | .00 | 165      |        |     |       |       |        |       |      |



| SLOT<br>INTERFACE<br>LOCATION<br>IN. | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | WSLOT<br>LB/SEC |
|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FOREWARD                             | 1.1676+02  | 4.6463+01 | 4.6392+01   | 5.9237+03   | 1.7978+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 4.1965+02       |
| AFT                                  | 1.1677+02  | 4.6411+01 | 4.6346+01   | 5.9228+03   | 1.7996+02     | 1.6460+04       | 0.0000        | 0.0000       | 0.0000              | 4.1965+02       |

GAS BUILDUP IN SLOT, DW/DT = -1.5116-03

|          |           |           |           |           |           |           |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FOREWARD | 4.2705+02 | 4.6423+01 | 4.6328+01 | 5.9232+03 | 2.0755+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.8157+02 |
| AFT      | 4.2706+02 | 4.6386+01 | 4.6292+01 | 5.9226+03 | 2.0769+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 4.8157+02 |

GAS BUILDUP IN SLOT, DW/DT = -1.5003-03

|          |           |           |           |           |           |           |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|-----------|
| FOREWARD | 7.4634+02 | 4.6352+01 | 4.6170+01 | 5.9217+03 | 2.8809+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.6635+02 |
| AFT      | 7.4635+02 | 4.6292+01 | 4.6110+01 | 5.9207+03 | 2.8842+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 6.6635+02 |

GAS BUILDUP IN SLOT, DW/DT = -1.4922-03

|                                                                                                                             |          |            |   |               |                  |               |
|-----------------------------------------------------------------------------------------------------------------------------|----------|------------|---|---------------|------------------|---------------|
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 45.0000  | SECTOR NO. | 2 | TAU = 43.5094 | TAUWDP = 43.5094 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 45.0000  | SECTOR NO. | 3 | TAU = 43.5094 | TAUWDP = 43.5094 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 60.0000  | SECTOR NO. | 1 | TAU = 43.4602 | TAUWDP = 43.4602 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 60.0000  | SECTOR NO. | 2 | TAU = 43.4602 | TAUWDP = 43.4602 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 60.0000  | SECTOR NO. | 3 | TAU = 43.4602 | TAUWDP = 43.4602 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 60.0000  | SECTOR NO. | 4 | TAU = 43.4602 | TAUWDP = 43.4602 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 75.0000  | SECTOR NO. | 1 | TAU = 43.4110 | TAUWDP = 43.4110 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 75.0000  | SECTOR NO. | 4 | TAU = 43.4110 | TAUWDP = 43.4110 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 75.0000  | SECTOR NO. | 5 | TAU = 43.4110 | TAUWDP = 43.4110 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 75.0000  | SECTOR NO. | 8 | TAU = 43.4110 | TAUWDP = 43.4110 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 90.0000  | SECTOR NO. | 5 | TAU = 43.3618 | TAUWDP = 43.3618 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 90.0000  | SECTOR NO. | 6 | TAU = 43.3618 | TAUWDP = 43.3618 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 90.0000  | SECTOR NO. | 7 | TAU = 43.3618 | TAUWDP = 43.3618 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 90.0000  | SECTOR NO. | 8 | TAU = 43.3618 | TAUWDP = 43.3618 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 143.9190 | SECTOR NO. | 5 | TAU = 43.3340 | TAUWDP = 43.3340 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 143.9190 | SECTOR NO. | 6 | TAU = 43.3340 | TAUWDP = 43.3340 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 143.9190 | SECTOR NO. | 7 | TAU = 43.3340 | TAUWDP = 43.3340 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 143.9190 | SECTOR NO. | 8 | TAU = 43.3340 | TAUWDP = 43.3340 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 478.2040 | SECTOR NO. | 1 | TAU = 43.2556 | TAUWDP = 43.2556 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 478.2040 | SECTOR NO. | 2 | TAU = 43.2556 | TAUWDP = 43.2556 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 478.2040 | SECTOR NO. | 3 | TAU = 43.2556 | TAUWDP = 43.2556 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 493.2040 | SECTOR NO. | 5 | TAU = 43.1473 | TAUWDP = 43.1473 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 493.2040 | SECTOR NO. | 6 | TAU = 43.1473 | TAUWDP = 43.1473 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 493.2040 | SECTOR NO. | 7 | TAU = 43.1473 | TAUWDP = 43.1473 | TIME = 118.00 |
| NEB BURNOUT INCREMENT LOCATION                                                                                              | 493.2040 | SECTOR NO. | 8 | TAU = 43.1473 | TAUWDP = 43.1473 | TIME = 118.00 |
| *PARTON* TIME=118.50 IS=2 ZCALC( 4)= 45.00 ZCALC( 3)= 30.00 AINCW= 35.12 AINCHI= 30.00 DELZ= 5.121 ALP=454.71 ALPHI=454.68  |          |            |   |               |                  |               |
| *PARTON* TIME=118.50 IS=3 ZCALC( 4)= 45.00 ZCALC( 3)= 30.00 AINCW= 37.87 AINCHI= 30.00 DELZ= 7.866 ALP=454.71 ALPHI=454.62  |          |            |   |               |                  |               |
| *PARTON* TIME=118.50 IS=1 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 50.02 AINCHI= 45.00 DELZ= 5.018 ALP=454.72 ALPHI=454.68  |          |            |   |               |                  |               |
| *PARTON* TIME=118.50 IS=4 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 54.17 AINCHI= 45.00 DELZ= 9.169 ALP=454.72 ALPHI=454.61  |          |            |   |               |                  |               |
| *PARTON* TIME=118.50 IS=5 ZCALC( 6)= 75.00 ZCALC( 5)= 60.00 AINCW= 73.57 AINCHI= 60.00 DELZ= 13.571 ALP=454.73 ALPHI=454.53 |          |            |   |               |                  |               |
| *PARTON* TIME=118.50 IS=7 ZCALC( 6)= 75.00 ZCALC( 5)= 60.00 AINCW= 74.20 AINCHI= 60.00 DELZ= 10.284 ALP=454.73 ALPHI=454.44 |          |            |   |               |                  |               |

|          |             |      |              |        |              |        |        |        |         |        |             |            |              |
|----------|-------------|------|--------------|--------|--------------|--------|--------|--------|---------|--------|-------------|------------|--------------|
| *PARTBN* | TIME=118.50 | IS=8 | ZCALC( 61)=  | 75.00  | ZCALC( 51)=  | 60.00  | AINCW= | 71.60  | AINCHI= | 60.00  | DELZ=11.596 | ALP=454.72 | ALPHI=454.57 |
| *PARTBN* | TIME=118.50 | IS=6 | ZCALC( 71)=  | 90.00  | ZCALC( 61)=  | 75.00  | AINCW= | 77.45  | AINCHI= | 75.00  | DELZ= 4.451 | ALP=454.73 | ALPHI=454.71 |
| *PARTBN* | TIME=118.50 | IS=1 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 462.06 | DELZ= 1.140 | ALP=453.85 | ALPHI=425.65 |
| *PARTBN* | TIME=118.50 | IS=2 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 462.68 | DELZ= .522  | ALP=454.13 | ALPHI=441.18 |
| *PARTBN* | TIME=118.50 | IS=3 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 462.57 | DELZ= .636  | ALP=454.07 | ALPHI=438.30 |
| *PARTBN* | TIME=118.50 | IS=4 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 461.89 | DELZ= 1.311 | ALP=453.77 | ALPHI=421.33 |
| *PARTBN* | TIME=118.50 | IS=5 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 461.09 | DELZ= 2.110 | ALP=453.42 | ALPHI=401.25 |
| *PARTBN* | TIME=118.50 | IS=6 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 460.85 | DELZ= 2.351 | ALP=453.31 | ALPHI=395.20 |
| *PARTBN* | TIME=118.50 | IS=7 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 460.90 | DELZ= 2.304 | ALP=453.33 | ALPHI=396.38 |
| *PARTBN* | TIME=118.50 | IS=8 | ZCALC( 361)= | 463.20 | ZCALC( 351)= | 457.06 | AINCW= | 463.20 | AINCHI= | 461.18 | DELZ= 2.028 | ALP=453.45 | ALPHI=403.31 |
| *PARTBN* | TIME=118.50 | IS=1 | ZCALC( 371)= | 478.20 | ZCALC( 361)= | 463.20 | AINCW= | 477.13 | AINCHI= | 463.20 | DELZ=13.926 | ALP=454.27 | ALPHI=453.85 |
| *PARTBN* | TIME=118.50 | IS=2 | ZCALC( 371)= | 478.20 | ZCALC( 361)= | 463.20 | AINCW= | 469.58 | AINCHI= | 463.20 | DELZ= 6.378 | ALP=454.28 | ALPHI=454.13 |
| *PARTBN* | TIME=118.50 | IS=3 | ZCALC( 371)= | 478.20 | ZCALC( 361)= | 463.20 | AINCW= | 479.23 | AINCHI= | 463.20 | DELZ= 7.773 | ALP=454.26 | ALPHI=453.77 |
| *PARTBN* | TIME=118.50 | IS=4 | ZCALC( 371)= | 478.20 | ZCALC( 361)= | 463.20 | AINCW= | 479.23 | AINCHI= | 463.20 | DELZ=16.022 | ALP=454.26 | ALPHI=453.77 |
| *PARTBN* | TIME=118.50 | IS=5 | ZCALC( 381)= | 493.20 | ZCALC( 371)= | 478.20 | AINCW= | 487.84 | AINCHI= | 478.20 | DELZ= 9.639 | ALP=454.24 | ALPHI=453.93 |
| *PARTBN* | TIME=118.50 | IS=6 | ZCALC( 381)= | 493.20 | ZCALC( 371)= | 478.20 | AINCW= | 489.95 | AINCHI= | 478.20 | DELZ=12.264 | ALP=454.23 | ALPHI=453.82 |
| *PARTBN* | TIME=118.50 | IS=7 | ZCALC( 381)= | 493.20 | ZCALC( 371)= | 478.20 | AINCW= | 489.95 | AINCHI= | 478.20 | DELZ=11.750 | ALP=454.24 | ALPHI=453.84 |
| *PARTBN* | TIME=118.50 | IS=8 | ZCALC( 381)= | 493.20 | ZCALC( 371)= | 478.20 | AINCW= | 486.95 | AINCHI= | 478.20 | DELZ= 8.748 | ALP=454.24 | ALPHI=453.97 |
| *PARTBN* | TIME=118.50 | IS=2 | ZCALC( 41)=  | 45.00  | ZCALC( 31)=  | 30.00  | AINCW= | 35.12  | AINCHI= | 30.00  | DELZ= 5.121 | ALP=454.71 | ALPHI=454.68 |
| *PARTBN* | TIME=118.50 | IS=3 | ZCALC( 41)=  | 45.00  | ZCALC( 31)=  | 30.00  | AINCW= | 37.87  | AINCHI= | 30.00  | DELZ= 7.866 | ALP=454.71 | ALPHI=454.62 |
| *PARTBN* | TIME=118.50 | IS=1 | ZCALC( 51)=  | 60.00  | ZCALC( 41)=  | 45.00  | AINCW= | 50.02  | AINCHI= | 45.00  | DELZ= 5.018 | ALP=454.72 | ALPHI=454.68 |
| *PARTBN* | TIME=118.50 | IS=4 | ZCALC( 51)=  | 60.00  | ZCALC( 41)=  | 45.00  | AINCW= | 54.17  | AINCHI= | 45.00  | DELZ= 9.169 | ALP=454.72 | ALPHI=454.61 |
| *PARTBN* | TIME=118.50 | IS=5 | ZCALC( 61)=  | 75.00  | ZCALC( 51)=  | 60.00  | AINCW= | 73.57  | AINCHI= | 60.00  | DELZ=13.571 | ALP=454.73 | ALPHI=454.53 |
| *PARTBN* | TIME=118.50 | IS=6 | ZCALC( 61)=  | 75.00  | ZCALC( 51)=  | 60.00  | AINCW= | 78.28  | AINCHI= | 60.00  | DELZ=18.284 | ALP=454.73 | ALPHI=454.44 |
| *PARTBN* | TIME=118.50 | IS=7 | ZCALC( 61)=  | 75.00  | ZCALC( 51)=  | 60.00  | AINCW= | 71.60  | AINCHI= | 60.00  | DELZ=11.596 | ALP=454.72 | ALPHI=454.57 |
| *PARTBN* | TIME=118.50 | IS=8 | ZCALC( 61)=  | 75.    |              |        |        |        |         |        |             |            |              |

\*PARTBN\* TIME=118.50 IS=7 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 460.90 DELZ= 2.304 ALP=453.33 ALPHI=396.38  
\*PARTBN\* TIME=118.50 IS=8 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 461.18 DELZ= 2.028 ALP=453.45 ALPHI=403.31  
\*PARTBN\* TIME=118.50 IS=1 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 477.13 AINCHI= 463.20 DELZ=13.926 ALP=454.27 ALPHI=453.85  
\*PARTBN\* TIME=118.50 IS=2 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 469.58 AINCHI= 463.20 DELZ= 6.378 ALP=454.28 ALPHI=454.13  
\*PARTBN\* TIME=118.50 IS=3 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 470.98 AINCHI= 463.20 DELZ= 7.773 ALP=454.28 ALPHI=454.07  
\*PARTBN\* TIME=118.50 IS=4 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 479.23 AINCHI= 463.20 DELZ=16.022 ALP=454.26 ALPHI=453.77  
\*PARTBN\* TIME=118.50 IS=5 ZCALC( 38)= 493.20 ZCALC( 37)= 478.20 AINCW= 487.84 AINCHI= 478.20 DELZ= 9.639 ALP=454.24 ALPHI=453.93  
\*PARTBN\* TIME=118.50 IS=6 ZCALC( 38)= 493.20 ZCALC( 37)= 478.20 AINCW= 492.47 AINCHI= 478.20 DELZ=12.264 ALP=454.23 ALPHI=453.82  
\*PARTBN\* TIME=118.50 IS=7 ZCALC( 38)= 493.20 ZCALC( 37)= 478.20 AINCW= 489.95 AINCHI= 478.20 DELZ=11.750 ALP=454.24 ALPHI=453.84  
\*PARTBN\* TIME=118.50 IS=8 ZCALC( 38)= 493.20 ZCALC( 37)= 478.20 AINCW= 484.95 AINCHI= 478.20 DELZ= 8.748 ALP=454.24 ALPHI=453.97  
\*LE3 BURNOUT INCREMENT LOCATION = 15.0000 SECTOR NO. 2 TAU = 43.6078 TAUWDP = 43.6078 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 30.0000 SECTOR NO. 1 TAU = 43.5586 TAUWDP = 43.5586 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 35.0000 SECTOR NO. 2 TAU = 43.5586 TAUWDP = 43.5586 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 30.0000 SECTOR NO. 3 TAU = 43.5586 TAUWDP = 43.5586 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 45.0000 SECTOR NO. 1 TAU = 43.5094 TAUWDP = 43.5094 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 45.0000 SECTOR NO. 4 TAU = 43.5094 TAUWDP = 43.5094 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 60.0000 SECTOR NO. 5 TAU = 43.4602 TAUWDP = 43.4602 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 60.0000 SECTOR NO. 6 TAU = 43.4602 TAUWDP = 43.4602 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 65.0000 SECTOR NO. 7 TAU = 43.4602 TAUWDP = 43.4602 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 65.0000 SECTOR NO. 8 TAU = 43.4602 TAUWDP = 43.4602 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 75.0000 SECTOR NO. 6 TAU = 43.4110 TAUWDP = 43.4110 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 75.0000 SECTOR NO. 7 TAU = 43.4110 TAUWDP = 43.4110 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 463.2040 SECTOR NO. 2 TAU = 43.3640 TAUWDP = 43.3640 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 463.2040 SECTOR NO. 3 TAU = 43.3640 TAUWDP = 43.3640 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 478.2040 SECTOR NO. 4 TAU = 43.2556 TAUWDP = 43.2556 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 478.2040 SECTOR NO. 5 TAU = 43.2556 TAUWDP = 43.2556 TIME = 118.50  
\*LE3 BURNOUT INCREMENT LOCATION = 478.2040 SECTOR NO. 8 TAU = 43.2556 TAUWDP = 43.2556 TIME = 118.50  
\*PARTBN\* TIME=119.00 IS=2 ZCALC( 2)= 15.00 ZCALC( 1)= .00 AINCW= 12.88 AINCHI= .00 DELZ=12.882 ALP=454.70 ALPHI=454.61  
\*PARTBN\* TIME=119.00 IS=3 ZCALC( 2)= 15.00 ZCALC( 1)= .00 AINCW= 17.19 AINCHI= .00 DELZ=17.186 ALP=454.71 ALPHI=454.56  
\*PARTBN\* TIME=119.00 IS=1 ZCALC( 3)= 30.00 ZCALC( 2)= 15.00 AINCW= 20.50 AINCHI= 15.00 DELZ=13.497 ALP=454.71 ALPHI=454.51  
\*PARTBN\* TIME=119.00 IS=4 ZCALC( 3)= 30.00 ZCALC( 2)= 15.00 AINCW= 32.63 AINCHI= 15.00 DELZ=17.628 ALP=454.71 ALPHI=454.44  
\*PARTBN\* TIME=119.00 IS=5 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 51.97 AINCHI= 45.00 DELZ= 6.968 ALP=454.72 ALPHI=454.65  
\*PARTBN\* TIME=119.00 IS=6 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 57.82 AINCHI= 45.00 DELZ=12.821 ALP=454.72 ALPHI=454.54  
\*PARTBN\* TIME=119.00 IS=7 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 56.67 AINCHI= 45.00 DELZ=11.675 ALP=454.72 ALPHI=454.56  
\*PARTBN\* TIME=119.00 IS=8 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 50.00 AINCHI= 45.00 DELZ= 4.998 ALP=454.72 ALPHI=454.68  
\*PARTBN\* TIME=119.00 IS=1 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 462.96 DELZ= .245 ALP=454.25 ALPHI=448.14  
\*PARTBN\* TIME=119.00 IS=4 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 462.79 DELZ= .417 ALP=454.17 ALPHI=443.82  
\*PARTBN\* TIME=119.00 IS=5 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 461.99 DELZ= 1.217 ALP=453.82 ALPHI=423.69  
\*PARTBN\* TIME=119.00 IS=6 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 461.75 DELZ= 1.459 ALP=453.71 ALPHI=417.63  
\*PARTBN\* TIME=119.00 IS=7 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 461.77 DELZ= 1.412 ALP=453.73 ALPHI=410.81  
\*PARTBN\* TIME=119.00 IS=8 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 462.07 DELZ= 1.136 ALP=453.85 ALPHI=425.75  
\*PARTBN\* TIME=119.00 IS=1 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 466.20 AINCHI= 463.20 DELZ= 2.994 ALP=454.29 ALPHI=454.25  
\*PARTBN\* TIME=119.00 IS=4 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 468.30 AINCHI= 463.20 DELZ= 5.093 ALP=454.29 ALPHI=454.17  
\*PARTBN\* TIME=119.00 IS=5 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 478.09 AINCHI= 463.20 DELZ=14.881 ALP=454.26 ALPHI=453.62  
\*PARTBN\* TIME=119.00 IS=6 ZCALC( 37)= 478.20 ZCALC( 36)= 463.20 AINCW= 477.09 AINCHI= 463.20 DELZ=13.883 ALP=454.27 ALPHI=453.85  
\*PARTBN\* TIME=119.00 IS=8 ZCALC( 38)= 493.20 ZCALC( 37)= 478.20 AINCW= 480.73 AINCHI= 478.20 DELZ= 2.524 ALP=454.26 ALPHI=454.22  
\*PARTBN\* TIME=119.00 IS=7 ZCALC( 38)= 493.20 ZCALC( 37)= 478.20 AINCW= 480.21 AINCHI= 478.20 DELZ= 2.009 ALP=454.26 ALPHI=454.24  
\*PARTBN\* TIME=119.00 IS=2 ZCALC( 2)= 15.00 ZCALC( 1)= .00 AINCW= 12.88 AINCHI= .00 DELZ=12.882 ALP=454.70 ALPHI=454.61  
\*PARTBN\* TIME=119.00 IS=3 ZCALC( 2)= 15.00 ZCALC( 1)= .00 AINCW= 17.19 AINCHI= .00 DELZ=17.186 ALP=454.71 ALPHI=454.56  
\*PARTBN\* TIME=119.00 IS=1 ZCALC( 3)= 30.00 ZCALC( 2)= 15.00 AINCW= 20.50 AINCHI= 15.00 DELZ=13.497 ALP=454.71 ALPHI=454.51  
\*PARTBN\* TIME=119.00 IS=4 ZCALC( 3)= 30.00 ZCALC( 2)= 15.00 AINCW= 32.63 AINCHI= 15.00 DELZ=17.628 ALP=454.71 ALPHI=454.44  
\*PARTBN\* TIME=119.00 IS=5 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 51.97 AINCHI= 45.00 DELZ= 6.968 ALP=454.72 ALPHI=454.65  
\*PARTBN\* TIME=119.00 IS=6 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 57.82 AINCHI= 45.00 DELZ=12.821 ALP=454.72 ALPHI=454.54  
\*PARTBN\* TIME=119.00 IS=7 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 56.67 AINCHI= 45.00 DELZ=11.675 ALP=454.72 ALPHI=454.56  
\*PARTBN\* TIME=119.00 IS=8 ZCALC( 5)= 60.00 ZCALC( 4)= 45.00 AINCW= 50.00 AINCHI= 45.00 DELZ= 4.998 ALP=454.72 ALPHI=454.68  
\*PARTBN\* TIME=119.00 IS=1 ZCALC( 36)= 463.20 ZCALC( 35)= 457.06 AINCW= 463.20 AINCHI= 462.96 DELZ= .245 ALP=454.25 ALPHI=448.14

|           |             |      |             |        |             |        |        |        |        |        |       |        |            |              |
|-----------|-------------|------|-------------|--------|-------------|--------|--------|--------|--------|--------|-------|--------|------------|--------------|
| •PARTI00• | TIME=119.00 | 15=4 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCW= | 462.79 | DELZ= | •417   | ALP=454.17 | ALPHI=443.82 |
| •PARTI01• | TIME=119.00 | 15=5 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCW= | 461.99 | DELZ= | 1.217  | ALP=453.82 | ALPHI=442.69 |
| •PARTI02• | TIME=119.00 | 15=6 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCW= | 461.75 | DELZ= | 1.459  | ALP=453.71 | ALPHI=417.63 |
| •PARTI03• | TIME=119.00 | 15=7 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCW= | 461.79 | DELZ= | 1.412  | ALP=453.73 | ALPHI=418.61 |
| •PARTI04• | TIME=119.00 | 15=8 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCW= | 462.07 | DELZ= | 1.136  | ALP=453.85 | ALPHI=425.75 |
| •PARTI05• | TIME=119.00 | 15=9 | ZCALC( 36)= | 463.20 | ZCALC( 35)= | 457.06 | AINCW= | 463.20 | AINCW= | 462.00 | DELZ= | 2.994  | ALP=454.29 | ALPHI=454.25 |
| •PARTI06• | TIME=119.00 | 15=1 | ZCALC( 37)= | 478.20 | ZCALC( 36)= | 463.20 | AINCW= | 466.20 | AINCW= | 463.20 | DELZ= | 5.093  | ALP=454.29 | ALPHI=454.17 |
| •PARTI07• | TIME=119.00 | 15=2 | ZCALC( 37)= | 478.20 | ZCALC( 36)= | 463.20 | AINCW= | 468.30 | AINCW= | 463.20 | DELZ= | 14.881 | ALP=454.26 | ALPHI=453.82 |
| •PARTI08• | TIME=119.00 | 15=3 | ZCALC( 37)= | 478.20 | ZCALC( 36)= | 463.20 | AINCW= | 477.09 | AINCW= | 463.20 | DELZ= | 13.584 | ALP=454.27 | ALPHI=453.85 |
| •PARTI09• | TIME=119.00 | 15=4 | ZCALC( 37)= | 478.20 | ZCALC( 36)= | 463.20 | AINCW= | 477.09 | AINCW= | 463.20 | DELZ= | 2.824  | ALP=454.26 | ALPHI=454.22 |
| •PARTI10• | TIME=119.00 | 15=5 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 480.73 | AINCW= | 478.20 | DELZ= | 2.009  | ALP=454.26 | ALPHI=454.24 |
| •PARTI11• | TIME=119.00 | 15=6 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | •00    | ALP=454.70 | ALPHI=454.51 |
| •PARTI12• | TIME=119.00 | 15=7 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 12.00  | ALP=454.71 | ALPHI=454.56 |
| •PARTI13• | TIME=119.00 | 15=8 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | •00    | ALP=454.71 | ALPHI=454.56 |
| •PARTI14• | TIME=119.00 | 15=9 | ZCALC( 38)= | 493.20 | ZCALC( 37)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 17.19  | ALP=454.71 | ALPHI=454.51 |
| •PARTI15• | TIME=119.00 | 15=1 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 15.00  | ALP=454.71 | ALPHI=454.51 |
| •PARTI16• | TIME=119.00 | 15=2 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 17.628 | ALP=454.71 | ALPHI=454.44 |
| •PARTI17• | TIME=119.00 | 15=3 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 15.00  | ALP=454.72 | ALPHI=454.65 |
| •PARTI18• | TIME=119.00 | 15=4 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 45.00  | ALP=454.72 | ALPHI=454.54 |
| •PARTI19• | TIME=119.00 | 15=5 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 12.421 | ALP=454.72 | ALPHI=454.54 |
| •PARTI20• | TIME=119.00 | 15=6 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 45.00  | ALP=454.72 | ALPHI=454.54 |
| •PARTI21• | TIME=119.00 | 15=7 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 45.00  | ALP=454.72 | ALPHI=454.54 |
| •PARTI22• | TIME=119.00 | 15=8 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 45.00  | ALP=454.72 | ALPHI=454.54 |
| •PARTI23• | TIME=119.00 | 15=9 | ZCALC( 39)= | 493.20 | ZCALC( 38)= | 478.20 | AINCW= | 480.21 | AINCW= | 478.20 | DELZ= | 45.00  | ALP=454.72 | ALPHI=454.54 |
| •PARTI24• |             |      |             |        |             |        |        |        |        |        |       |        |            |              |

| IGNITION TIME, TIME (S)                    |  | 119.00000            |               |              |
|--------------------------------------------|--|----------------------|---------------|--------------|
| PARAMETER DESCRIPTION (UNITS)              |  | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
| MOTOR PARAMETERS:                          |  |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             |  | FTDEL                | 321553.23     | 72288.041    |
| TOTAL VACUUM THRUST (N,LBF)                |  | FTVAC                | 326873.89     | 73304.314    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      |  | FI                   | 2220.5164     | 499.19194    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        |  | SNMUTI               | .12332011*10  | .27723464*09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        |  | TISP                 | 254.02394     | 254.02394    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           |  | SNMVTI               | .12832272*10  | .28848876*09 |
| THRUST COEFFICIENT                         |  | CF                   | 1.6264789     | 1.6264789    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) |  | WDOT                 | 127.70253     | 285.94514    |
| FLOWRATE INTEGRAL (KG,LBM)                 |  | SWDOTN               | 535303.71     | 1114034.0    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           |  | MIF                  | 1.1917350     | 2.6273260    |
| INERT MASS REMAINING (KG,LBM)              |  | MIR                  | 16.720112     | 36.861537    |
| TOTAL BURN AREA (M**2,IN**2)               |  | ABTOT                | 14.415468     | 22344.521    |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       |  | VF                   | 2.6792966     | 163500.71    |
| PROPELLANT MASS REMAINING (KG,LBM)         |  | WF                   | 1431.7616     | 3156.4940    |
| TOTAL GAS MASS (KG,LBM)                    |  | WGTOT                | 45.995822     | 101.40343    |
| RATIO OF SPECIFIC HEATS                    |  | GAMA                 | 1.1591574     | 1.1591574    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) |  | AMW                  | 12.688103     | 27.972479    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) |  | CSTAR                | 1546.4960     | 5073.0360    |
| MAXIMUM CHAMBER MACH NUMBER                |  | AMPN                 | .90733213-C1  | .90733213-D1 |
| HEAD END PARAMETERS:                       |  |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          |  | PH                   | 12652031.     | 18.351380    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   |  | SPHDT                | .53263072*11  | 77251.556    |
| BURN AREA (M**2,IN**2)                     |  | AHH                  | .32043318     | 496.67242    |
| BURN RATE (M/S,IN/S)                       |  | RBZ(1)               | .27386536-02  | .10782101    |
| DISTANCE BURNED (M,IN)                     |  | TAUZ(1)              | 1.1071286     | 43.587739    |
| PROPELLANT VOLUME (M**3,IN**3)             |  | VFH                  | .22338125     | 13631.560    |
| GAS VOLUME (M**3,IN**3)                    |  | VPH                  | 54.880451     | 3349010.6    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       |  | PKNT(1,3)            | 3285.5771     | 5914.0387    |
| CYLINDRICAL SECTION PARAMETERS:            |  |                      |               |              |
| NOZIAL BURN AREA (M**2,IN**2)              |  | ABCYL                | 14.095035     | 21847.348    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        |  | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             |  | VFCYL                | 234539492     | 149749.17    |
| GAS VOLUME (M**3,IN**3)                    |  | VP                   | 285.17115     | 17402211.    |
| AFT END PARAMETERS:                        |  |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  |  | PUN                  | 12511753.     | 18.146764    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   |  | SPONDT               | .50849172*11  | 73750.489    |
| BURN AREA (M**2,IN**2)                     |  | AAN                  | .30000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           |  | RBZ(1)*1,1)          | .27172849-02  | .10697972    |
| BURN RATE, REGION B (M/S,IN/SEC)           |  | RBZ(1)*2,1)          | .27148320-02  | .10668315    |
| DISTANCE BURNED, REGION A (M,IN)           |  | TAUZ(1)*1,1)         | .74820430     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           |  | TAUZ(1)*2,1)         | .52501800     | 23.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             |  | VFN                  | .19602722-02  | .11998929    |
| GAS VOLUME (M**3,IN**3)                    |  | VPN                  | 17.347463     | 1040300.0    |
| GAS STATIC TEMP. NOZ ENT (DEG K,DEG R)     |  | PRNT(1)*2,3)         | 3285.5478     | 5913.9861    |
| PORT AREA, NOZ ENT (M**2,IN**2)            |  | AZA                  | 10.206839     | 15823.733    |
| NOZZLE PARAMETERS:                         |  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   |  | AT                   | 1.6523203     | 2483.6014    |
| EXPANSION RATIO                            |  | EPR                  | 6.7380939     | 6.7080939    |
| PRESSURE RATIO                             |  | PEPO                 | .23579873-01  | .23579873-01 |
| MISCELLANEOUS PARAMETERS:                  |  |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          |  | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              |  | ANLUPS               | 3.0000000     | 3.0000000    |

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OF POOR QUALITY

## MACHINERY DIVIDING PLANE DATA:

| MASS POSITION | PO    | PSIA  | PSIA    | DEG. R  | U      | M      | LF       | AP     | WDOT   | DNDOT  | DW/DT  | RB     | TAU   | RBTO   | TAUTO |
|---------------|-------|-------|---------|---------|--------|--------|----------|--------|--------|--------|--------|--------|-------|--------|-------|
| REGIONS       | PSIA  | PSIA  | INCHES  | SQ. IN. | LB/SEC | LB/SEC | LB/SEC   | LB/SEC | LB/SEC | LB/SEC | LB/SEC | IN/SEC | IN.   | IN/SEC | IN.   |
| FORE          | 18.35 | 18.35 | 5914.04 | 26.24   | .008   | 454.15 | 16412.44 | 24.18  | 3.39   | -20.79 | .1075  | 43.588 | .0000 | .000   | .000  |
| 15.000        | 18.35 | 18.35 | 5913.83 | 18.33   | .022   | 454.31 | 16419.02 | 72.19  | 46.50  | -1.51  | .1075  | 43.537 | .0000 | .000   | .000  |
| 15.000        | 18.35 | 18.35 | 5913.53 | 118.19  | .034   | 340.84 | 16425.63 | 108.92 | 35.22  | -1.51  | .1075  | 43.522 | .0000 | .000   | .000  |
| 40.000        | 18.34 | 18.32 | 5913.25 | 144.97  | .042   | 227.30 | 16432.14 | 133.58 | 23.14  | -1.53  | .1075  | 43.496 | .0000 | .000   | .000  |
| 60.000        | 18.34 | 18.32 | 5913.05 | 161.91  | .046   | 227.36 | 16436.90 | 149.18 | 14.06  | -1.53  | .1075  | 43.460 | .0000 | .000   | .000  |
| 75.000        | 18.34 | 18.32 | 5913.03 | 163.55  | .047   | .00    | 16445.21 | 150.76 | .00    | -1.59  | .1075  | 43.411 | .0000 | .000   | .000  |
| 90.000        | 18.34 | 18.32 | 5913.01 | 165.14  | .047   | .00    | 16451.72 | 152.29 | .00    | -1.53  | .1075  | 43.362 | .0000 | .000   | .000  |
| 105.000       | 18.34 | 18.32 | 5912.99 | 166.73  | .048   | .00    | 16458.21 | 153.82 | .00    | -1.53  | .1075  | 43.313 | .0000 | .000   | .000  |
| 115.761       | 18.34 | 18.32 | 5912.98 | 167.98  | .048   | .00    | 16463.29 | 155.02 | .00    | -1.20  | .1075  | 43.366 | .0000 | .000   | .000  |
| 116.771       | 18.34 | 18.30 | 5912.27 | 215.71  | .062   | .00    | 12831.49 | 155.02 | .00    | -1.00  | .1074  | 43.274 | .0000 | .000   | .000  |
| 131.771       | 18.33 | 18.30 | 5912.70 | 168.35  | .054   | .00    | 14017.96 | 156.30 | .00    | -1.28  | .1074  | 43.307 | .0000 | .000   | .000  |
| 143.919       | 18.32 | 18.30 | 5912.93 | 171.17  | .049   | .00    | 16429.00 | 157.48 | .00    | -1.17  | .1074  | 43.334 | .0000 | .000   | .000  |
| 155.919       | 18.33 | 18.30 | 5912.91 | 172.70  | .049   | .00    | 16440.39 | 159.00 | .00    | -1.52  | .1074  | 43.226 | .0000 | .000   | .000  |
| 173.919       | 18.33 | 18.30 | 5912.89 | 174.24  | .050   | .00    | 16451.70 | 160.53 | .00    | -1.53  | .1074  | 43.118 | .0000 | .000   | .000  |
| 185.919       | 18.33 | 18.30 | 5912.87 | 175.78  | .050   | .00    | 16462.95 | 162.05 | .00    | -1.53  | .1074  | 43.009 | .0000 | .000   | .000  |
| 203.919       | 18.33 | 18.30 | 5912.85 | 177.31  | .051   | .00    | 16474.13 | 163.58 | .00    | -1.53  | .1074  | 42.901 | .0000 | .000   | .000  |
| 215.919       | 18.33 | 18.30 | 5912.83 | 178.85  | .051   | .00    | 16485.23 | 165.11 | .00    | -1.53  | .1074  | 42.793 | .0000 | .000   | .000  |
| 233.919       | 18.33 | 18.30 | 5912.81 | 180.39  | .052   | .00    | 16496.27 | 166.64 | .00    | -1.53  | .1074  | 42.685 | .0000 | .000   | .000  |
| 248.919       | 18.33 | 18.30 | 5912.79 | 181.92  | .052   | .00    | 16507.23 | 168.17 | .00    | -1.53  | .1074  | 42.576 | .0000 | .000   | .000  |
| 263.919       | 18.33 | 18.30 | 5912.77 | 183.46  | .053   | .00    | 16518.13 | 169.71 | .00    | -1.53  | .1074  | 42.468 | .0000 | .000   | .000  |
| 278.919       | 18.33 | 18.30 | 5912.74 | 184.99  | .053   | .00    | 16528.95 | 171.24 | .00    | -1.53  | .1074  | 42.360 | .0000 | .000   | .000  |
| 293.919       | 18.33 | 18.30 | 5912.72 | 186.53  | .053   | .00    | 16539.71 | 172.77 | .00    | -1.53  | .1074  | 42.252 | .0000 | .000   | .000  |
| 308.919       | 18.33 | 18.30 | 5912.70 | 188.06  | .054   | .00    | 16550.39 | 174.31 | .00    | -1.54  | .1074  | 42.143 | .0000 | .000   | .000  |
| 323.919       | 18.33 | 18.30 | 5912.68 | 189.60  | .054   | .00    | 16561.01 | 175.84 | .00    | -1.54  | .1074  | 42.035 | .0000 | .000   | .000  |
| 338.919       | 18.33 | 18.30 | 5912.65 | 191.13  | .055   | .00    | 16571.56 | 177.38 | .00    | -1.54  | .1074  | 41.927 | .0000 | .000   | .000  |
| 353.919       | 18.33 | 18.30 | 5912.63 | 192.67  | .055   | .00    | 16582.03 | 178.92 | .00    | -1.54  | .1074  | 41.819 | .0000 | .000   | .000  |
| 368.919       | 18.33 | 18.30 | 5912.61 | 194.20  | .056   | .00    | 16592.44 | 180.46 | .00    | -1.54  | .1074  | 41.710 | .0000 | .000   | .000  |
| 383.919       | 18.33 | 18.30 | 5912.59 | 195.74  | .056   | .00    | 16602.77 | 182.00 | .00    | -1.54  | .1074  | 41.602 | .0000 | .000   | .000  |
| 398.919       | 18.33 | 18.30 | 5912.56 | 197.27  | .057   | .00    | 16613.01 | 183.54 | .00    | -1.54  | .1074  | 41.494 | .0000 | .000   | .000  |
| 413.919       | 18.33 | 18.30 | 5912.54 | 197.70  | .057   | .00    | 16615.85 | 183.96 | .00    | -1.42  | .1074  | 41.464 | .0000 | .000   | .000  |
| 428.919       | 18.33 | 18.30 | 5912.53 | 201.12  | .058   | .00    | 16629.10 | 185.50 | .00    | -1.54  | .1074  | 41.192 | .0000 | .000   | .000  |
| 443.919       | 18.33 | 18.30 | 5912.47 | 203.19  | .058   | .00    | 16631.95 | 186.41 | .00    | -1.54  | .1074  | 41.174 | .0000 | .000   | .000  |
| 458.919       | 18.33 | 18.29 | 5911.90 | 236.77  | .068   | .00    | 14067.75 | 186.42 | .00    | -1.00  | .1074  | 41.029 | .0000 | .000   | .000  |
| 473.919       | 18.33 | 18.29 | 5912.14 | 223.58  | .064   | .00    | 15035.50 | 187.76 | .00    | -1.35  | .1074  | 41.998 | .0000 | .000   | .000  |
| 488.919       | 18.32 | 18.29 | 5912.34 | 211.45  | .061   | .00    | 15988.25 | 189.20 | .00    | -1.43  | .1074  | 42.967 | .0000 | .000   | .000  |
| 503.919       | 18.32 | 18.28 | 5912.38 | 239.17  | .060   | 340.44 | 16433.62 | 192.00 | 2.19   | -1.54  | .1074  | 43.311 | .0000 | .000   | .000  |
| 518.919       | 18.31 | 18.26 | 5911.86 | 239.16  | .069   | 340.70 | 16432.21 | 219.28 | 25.75  | -1.54  | .1074  | 43.252 | .0000 | .000   | .000  |
| 533.919       | 18.31 | 18.26 | 5911.79 | 242.76  | .070   | 113.56 | 16430.95 | 222.54 | 1.74   | -1.51  | .1073  | 43.147 | .0000 | .000   | .000  |
| 548.919       | 18.31 | 18.26 | 5911.76 | 244.43  | .070   | .00    | 16398.95 | 224.05 | .00    | -1.51  | .1073  | 43.039 | .0000 | .000   | .000  |
| 563.919       | 18.31 | 18.26 | 5911.73 | 246.11  | .071   | .00    | 16397.39 | 225.57 | .00    | -1.51  | .1073  | 42.931 | .0000 | .000   | .000  |
| 578.919       | 18.31 | 18.26 | 5911.69 | 247.78  | .071   | .00    | 16395.81 | 227.09 | .00    | -1.51  | .1073  | 42.822 | .0000 | .000   | .000  |
| 593.919       | 18.32 | 18.26 | 5911.66 | 249.45  | .071   | .00    | 16394.24 | 228.59 | .00    | -1.51  | .1073  | 42.714 | .0000 | .000   | .000  |
| 608.919       | 18.32 | 18.26 | 5911.63 | 251.13  | .072   | .00    | 16392.66 | 230.11 | .00    | -1.51  | .1073  | 42.605 | .0000 | .000   | .000  |
| 623.919       | 18.32 | 18.26 | 5911.61 | 252.80  | .072   | .00    | 16391.07 | 231.62 | .00    | -1.51  | .1073  | 42.497 | .0000 | .000   | .000  |
| 638.919       | 18.32 | 18.26 | 5911.56 | 254.48  | .073   | .00    | 16389.48 | 233.14 | .00    | -1.51  | .1073  | 42.389 | .0000 | .000   | .000  |
| 653.919       | 18.32 | 18.26 | 5911.53 | 256.15  | .073   | .00    | 16387.89 | 234.65 | .00    | -1.51  | .1073  | 42.280 | .0000 | .000   | .000  |



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|          |       |       |         |        |      |     |          |        |     |       |       |        |       |      |
|----------|-------|-------|---------|--------|------|-----|----------|--------|-----|-------|-------|--------|-------|------|
| 620.204  | 18.32 | 18.26 | 5911.53 | 257.83 | .074 | .00 | 16386.29 | 236.16 | .00 | -1.51 | .1073 | 42.172 | .0000 | .000 |
| 643.204  | 18.32 | 18.26 | 5911.47 | 259.51 | .074 | .00 | 16384.69 | 237.68 | .00 | -1.51 | .1073 | 42.064 | .0000 | .000 |
| 658.204  | 18.32 | 18.26 | 5911.43 | 261.18 | .075 | .00 | 16383.28 | 239.19 | .00 | -1.51 | .1073 | 41.955 | .0000 | .000 |
| 673.204  | 18.32 | 18.26 | 5911.40 | 262.86 | .075 | .00 | 16381.46 | 240.70 | .00 | -1.51 | .1073 | 41.847 | .0000 | .000 |
| 688.204  | 18.32 | 18.26 | 5911.36 | 264.54 | .076 | .00 | 16379.85 | 242.22 | .00 | -1.51 | .1073 | 41.738 | .0000 | .000 |
| 703.204  | 18.32 | 18.26 | 5911.33 | 266.22 | .076 | .00 | 16378.22 | 243.73 | .00 | -1.51 | .1073 | 41.630 | .0000 | .000 |
| 718.204  | 18.32 | 18.26 | 5911.29 | 267.90 | .077 | .00 | 16376.60 | 245.25 | .00 | -1.51 | .1073 | 41.522 | .0000 | .000 |
| 725.191  | 18.32 | 18.26 | 5911.28 | 268.79 | .077 | .00 | 16375.73 | 246.05 | .00 | -1.51 | .1073 | 41.464 | .0000 | .000 |
| 741.191  | 18.32 | 18.26 | 5911.24 | 270.33 | .077 | .00 | 16382.83 | 247.57 | .00 | -1.51 | .1073 | 41.140 | .0000 | .000 |
| 748.336  | 18.33 | 18.26 | 5911.23 | 270.85 | .078 | .00 | 16305.23 | 248.09 | .00 | -1.52 | .1073 | 41.240 | .0000 | .000 |
| 748.346  | 18.32 | 18.24 | 5910.36 | 309.59 | .089 | .00 | 14349.56 | 248.39 | .00 | -1.50 | .1073 | 41.029 | .0000 | .000 |
| 761.346  | 18.32 | 18.24 | 5910.63 | 298.35 | .085 | .00 | 14972.15 | 249.44 | .00 | -1.35 | .1073 | 41.104 | .0000 | .000 |
| 776.346  | 18.31 | 18.24 | 5910.86 | 288.03 | .083 | .00 | 15597.03 | 250.85 | .00 | -1.41 | .1073 | 41.178 | .0000 | .000 |
| 791.346  | 18.31 | 18.24 | 5911.37 | 278.52 | .080 | .00 | 16224.19 | 252.32 | .00 | -1.47 | .1073 | 41.253 | .0000 | .000 |
| 794.831  | 18.31 | 18.24 | 5911.12 | 276.42 | .079 | .00 | 16376.23 | 252.67 | .00 | -1.35 | .1073 | 41.270 | .0000 | .000 |
| 809.831  | 18.31 | 18.24 | 5911.08 | 278.19 | .080 | .00 | 16363.97 | 254.18 | .00 | -1.51 | .1073 | 41.093 | .0000 | .000 |
| 823.831  | 18.31 | 18.24 | 5911.04 | 279.95 | .080 | .00 | 16356.92 | 255.69 | .00 | -1.51 | .1073 | 40.916 | .0000 | .000 |
| 839.831  | 18.31 | 18.24 | 5911.00 | 281.72 | .081 | .00 | 16350.28 | 257.20 | .00 | -1.51 | .1073 | 40.739 | .0000 | .000 |
| 854.781  | 18.31 | 18.24 | 5910.96 | 283.48 | .081 | .00 | 16343.67 | 258.71 | .00 | -1.50 | .1073 | 40.563 | .0000 | .000 |
| 869.781  | 18.31 | 18.24 | 5910.92 | 285.62 | .082 | .00 | 16315.86 | 260.22 | .00 | -1.51 | .1073 | 39.794 | .0000 | .000 |
| 884.781  | 18.31 | 18.24 | 5910.87 | 287.76 | .082 | .00 | 16287.96 | 261.72 | .00 | -1.51 | .1073 | 39.625 | .0000 | .000 |
| 899.781  | 18.31 | 18.24 | 5910.82 | 289.90 | .083 | .00 | 16263.09 | 263.22 | .00 | -1.50 | .1073 | 38.255 | .0000 | .000 |
| 914.781  | 18.31 | 18.24 | 5910.77 | 292.05 | .084 | .00 | 16232.22 | 264.72 | .00 | -1.50 | .1073 | 37.486 | .0000 | .000 |
| 929.781  | 18.32 | 18.24 | 5910.72 | 294.21 | .084 | .00 | 16204.33 | 266.22 | .00 | -1.50 | .1073 | 36.717 | .0000 | .000 |
| 944.781  | 18.32 | 18.24 | 5910.67 | 296.37 | .085 | .00 | 16176.44 | 267.72 | .00 | -1.50 | .1073 | 35.948 | .0000 | .000 |
| 959.781  | 18.32 | 18.24 | 5910.62 | 298.53 | .086 | .00 | 16148.55 | 269.21 | .00 | -1.49 | .1073 | 35.178 | .0000 | .000 |
| 974.781  | 18.32 | 18.24 | 5910.57 | 300.70 | .086 | .00 | 16120.65 | 270.70 | .00 | -1.49 | .1073 | 34.409 | .0000 | .000 |
| 989.781  | 18.32 | 18.24 | 5910.52 | 302.88 | .087 | .00 | 16092.74 | 272.19 | .00 | -1.49 | .1073 | 33.640 | .0000 | .000 |
| 1004.781 | 18.32 | 18.24 | 5910.47 | 305.06 | .087 | .00 | 16064.82 | 273.67 | .00 | -1.48 | .1073 | 32.871 | .0000 | .000 |
| 1019.781 | 18.32 | 18.24 | 5910.42 | 307.24 | .088 | .00 | 16036.89 | 275.15 | .00 | -1.48 | .1073 | 32.101 | .0000 | .000 |
| 1034.781 | 18.32 | 18.24 | 5910.37 | 309.43 | .089 | .00 | 16008.96 | 276.63 | .00 | -1.48 | .1073 | 31.332 | .0000 | .000 |
| 1040.791 | 18.32 | 18.24 | 5910.35 | 313.31 | .089 | .00 | 15997.77 | 277.22 | .00 | -1.59 | .1073 | 31.024 | .0000 | .000 |
| 1055.791 | 18.33 | 18.24 | 5910.29 | 312.50 | .090 | .00 | 15969.84 | 278.70 | .00 | -1.48 | .1073 | 30.483 | .0000 | .000 |
| 1070.791 | 18.33 | 18.24 | 5910.24 | 314.70 | .090 | .00 | 15941.80 | 280.17 | .00 | -1.47 | .1073 | 29.942 | .0000 | .000 |
| 1085.171 | 18.33 | 18.24 | 5910.19 | 316.67 | .091 | .00 | 15916.59 | 281.49 | .00 | -1.31 | .1073 | 29.459 | .0000 | .000 |
| AF1(A)   | 18.15 | 17.31 | 5875.96 | 992.82 | .285 | .00 | 15823.73 | 285.95 | .00 | -2.71 | .1070 | 29.460 | .0000 | .000 |
| AF1(B)   | 18.15 | 18.15 | 5913.99 | -3.03  | .001 | .00 | 10413.12 | 1.75   | .00 | -1.75 | .1069 | 20.670 | .0000 | .000 |





|                       |             |      |                    |                    |               |                |                  |               |              |
|-----------------------|-------------|------|--------------------|--------------------|---------------|----------------|------------------|---------------|--------------|
| *PARTBN               | TIME=119.50 | IS=5 | ZCALC( 4)= 45.00   | ZCALC( 3)= 30.00   | AINCW= 33.97  | AINCHI= 30.00  | DELZ= 3.968      | ALP=454.71    | ALPHI=454.70 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 4)= 45.00   | ZCALC( 3)= 30.00   | AINCW= 39.81  | AINCHI= 30.00  | DELZ= 9.811      | ALP=454.71    | ALPHI=454.59 |
| *PARTBN               | TIME=119.50 | IS=7 | ZCALC( 4)= 45.00   | ZCALC( 3)= 30.00   | AINCW= 38.67  | AINCHI= 30.00  | DELZ= 8.667      | ALP=454.71    | ALPHI=454.61 |
| *PARTBN               | TIME=119.50 | IS=5 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.73 | DELZ= .470       | ALP=454.15    | ALPHI=442.48 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.49 | DELZ= .712       | ALP=454.04    | ALPHI=436.40 |
| *PARTBN               | TIME=119.50 | IS=7 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.54 | DELZ= .665       | ALP=454.06    | ALPHI=427.57 |
| *PARTBN               | TIME=119.50 | IS=8 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.82 | DELZ= .389       | ALP=454.19    | ALPHI=444.53 |
| *PARTBN               | TIME=119.50 | IS=5 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 468.95 | AINCHI= 463.20 | DELZ= 5.748      | ALP=454.29    | ALPHI=454.15 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 471.90 | AINCHI= 463.20 | DELZ= 8.700      | ALP=454.28    | ALPHI=454.04 |
| *PARTBN               | TIME=119.50 | IS=7 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 471.33 | AINCHI= 463.20 | DELZ= 8.122      | ALP=454.28    | ALPHI=454.06 |
| *PARTBN               | TIME=119.50 | IS=8 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 467.95 | AINCHI= 463.20 | DELZ= 4.750      | ALP=454.29    | ALPHI=454.19 |
| *PARTBN               | TIME=119.50 | IS=1 | ZCALC( 2)= 15.00   | ZCALC( 1)= .00     | AINCW= 14.52  | AINCHI= .00    | DELZ= 14.522     | ALP=454.70    | ALPHI=454.59 |
| *PARTBN               | TIME=119.50 | IS=4 | ZCALC( 2)= 15.00   | ZCALC( 1)= .00     | AINCW= 32.00  | AINCHI= 15.00  | DELZ= 16.998     | ALP=454.71    | ALPHI=454.45 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 33.97  | AINCHI= 30.00  | DELZ= 3.968      | ALP=454.71    | ALPHI=454.70 |
| *PARTBN               | TIME=119.50 | IS=5 | ZCALC( 4)= 45.00   | ZCALC( 3)= 30.00   | AINCW= 39.81  | AINCHI= 30.00  | DELZ= 9.811      | ALP=454.71    | ALPHI=454.59 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 4)= 45.00   | ZCALC( 3)= 30.00   | AINCW= 38.67  | AINCHI= 30.00  | DELZ= 8.667      | ALP=454.71    | ALPHI=454.61 |
| *PARTBN               | TIME=119.50 | IS=7 | ZCALC( 4)= 45.00   | ZCALC( 3)= 30.00   | AINCW= 463.20 | AINCHI= 462.73 | DELZ= .470       | ALP=454.15    | ALPHI=442.48 |
| *PARTBN               | TIME=119.50 | IS=5 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.49 | DELZ= .712       | ALP=454.04    | ALPHI=436.40 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.54 | DELZ= .665       | ALP=454.06    | ALPHI=427.57 |
| *PARTBN               | TIME=119.50 | IS=7 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 463.20 | AINCHI= 462.82 | DELZ= .389       | ALP=454.19    | ALPHI=444.53 |
| *PARTBN               | TIME=119.50 | IS=8 | ZCALC( 36)= 463.20 | ZCALC( 35)= 457.06 | AINCW= 468.95 | AINCHI= 463.20 | DELZ= 5.748      | ALP=454.29    | ALPHI=454.15 |
| *PARTBN               | TIME=119.50 | IS=5 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 471.90 | AINCHI= 463.20 | DELZ= 8.700      | ALP=454.28    | ALPHI=454.04 |
| *PARTBN               | TIME=119.50 | IS=6 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 471.33 | AINCHI= 463.20 | DELZ= 8.122      | ALP=454.28    | ALPHI=454.06 |
| *PARTBN               | TIME=119.50 | IS=7 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 467.95 | AINCHI= 463.20 | DELZ= 4.750      | ALP=454.29    | ALPHI=454.19 |
| *PARTBN               | TIME=119.50 | IS=8 | ZCALC( 37)= 478.20 | ZCALC( 36)= 463.20 | AINCW= 467.95 | AINCHI= 463.20 | DELZ= 4.750      | ALP=454.29    | ALPHI=454.19 |
| ALB BURNOUT INCREMENT | LOCATION    |      | .0000              | SECTOR NO.         | 1             | TAU = 43.6570  | TAUWDP = 43.6570 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | .0000              | SECTOR NO.         | 4             | TAU = 43.6570  | TAUWDP = 43.6570 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | 30.0000            | SECTOR NO.         | 5             | TAU = 43.5586  | TAUWDP = 43.5586 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | 30.0000            | SECTOR NO.         | 6             | TAU = 43.5586  | TAUWDP = 43.5586 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | 35.0000            | SECTOR NO.         | 7             | TAU = 43.5586  | TAUWDP = 43.5586 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | 30.0000            | SECTOR NO.         | 8             | TAU = 43.5586  | TAUWDP = 43.5586 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | 463.2040           | SECTOR NO.         | 5             | TAU = 43.3640  | TAUWDP = 43.3640 | TIME = 119.50 |              |
| ALB BURNOUT INCREMENT | LOCATION    |      | 463.2040           | SECTOR NO.         | 8             | TAU = 43.3640  | TAUWDP = 43.3640 | TIME = 119.50 |              |
| *PARTBN               | TIME=120.00 | IS=8 | ZCALC( 2)= 15.00   | ZCALC( 1)= .00     | AINCW= 18.97  | AINCHI= .00    | DELZ=18.973      | ALP=454.71    | ALPHI=454.54 |
| *PARTBN               | TIME=120.00 | IS=5 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 19.48  | AINCHI= 15.00  | DELZ= 4.482      | ALP=454.71    | ALPHI=454.68 |
| *PARTBN               | TIME=120.00 | IS=6 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 25.31  | AINCHI= 15.00  | DELZ=10.312      | ALP=454.71    | ALPHI=454.57 |
| *PARTBN               | TIME=120.00 | IS=7 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 24.17  | AINCHI= 15.00  | DELZ= 9.171      | ALP=454.71    | ALPHI=454.60 |
| *PARTBN               | TIME=120.00 | IS=8 | ZCALC( 2)= 15.00   | ZCALC( 1)= .00     | AINCW= 18.97  | AINCHI= .00    | DELZ=18.973      | ALP=454.71    | ALPHI=454.54 |
| *PARTBN               | TIME=120.00 | IS=5 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 19.48  | AINCHI= 15.00  | DELZ= 4.482      | ALP=454.71    | ALPHI=454.68 |
| *PARTBN               | TIME=120.00 | IS=6 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 25.31  | AINCHI= 15.00  | DELZ=10.312      | ALP=454.71    | ALPHI=454.57 |
| *PARTBN               | TIME=120.00 | IS=7 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 24.17  | AINCHI= 15.00  | DELZ= 9.171      | ALP=454.71    | ALPHI=454.60 |
| *PARTBN               | TIME=120.00 | IS=8 | ZCALC( 2)= 15.00   | ZCALC( 1)= .00     | AINCW= 18.97  | AINCHI= .00    | DELZ=18.973      | ALP=454.71    | ALPHI=454.54 |
| *PARTBN               | TIME=120.00 | IS=5 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 19.48  | AINCHI= 15.00  | DELZ= 4.482      | ALP=454.71    | ALPHI=454.68 |
| *PARTBN               | TIME=120.00 | IS=6 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 25.31  | AINCHI= 15.00  | DELZ=10.312      | ALP=454.71    | ALPHI=454.57 |
| *PARTBN               | TIME=120.00 | IS=7 | ZCALC( 3)= 30.00   | ZCALC( 2)= 15.00   | AINCW= 24.17  | AINCHI= 15.00  | DELZ= 9.171      | ALP=454.71    | ALPHI=454.60 |

IGNITION TIME, TIME (S)

120.00000

| PARAMETER DESCRIPTION (UNITS)                                   | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH       |
|-----------------------------------------------------------------|----------------------|---------------|---------------|
| <b>ROTOR PARAMETERS:</b>                                        |                      |               |               |
| TOTAL DELIVERED THRUST (N,LBF)                                  | FTDEL                | 84751.331     | 19052.857     |
| TOTAL VACUUM THRUST (N,LBF)                                     | FTVAC                | 88901.401     | 19985.830     |
| THRUST CONTRIBUTION OF INERTS (N,LBF)                           | FI                   | 426.95688     | 95.983725     |
| DELIVERED TOTAL IMPULSE (N·S,LBF·S)                             | SRMOTI               | 0.12332072+10 | 0.27727693+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)                             | TISP                 | 254.10961     | 254.10961     |
| VACUUM TOTAL IMPULSE (N·S,LBF·S)                                | SRMVTI               | 0.12834197+10 | 0.28852423+09 |
| THRUST COEFFICIENT                                              | CF                   | 1.6232015     | 1.6232015     |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)                      | WDOT                 | 35.496090     | 78.145252     |
| FLOWRATE INTEGRAL (KG,LBM)                                      | SRDOTN               | 505300.33     | 1114172.9     |
| INERT MASS FLOWRATE (KG/S,LBM/S)                                | MIF                  | 0.2214464     | 0.50517750    |
| INERT MASS REMAINING (KG,LBM)                                   | MIR                  | 16.320971     | 35.981583     |
| TOTAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )              | ABTOT                | 3.4707242     | 5379.6332     |
| TOTAL PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )      | VF                   | 2.6161995     | 159650.29     |
| PROPELLANT MASS REMAINING (KG,LBM)                              | WF                   | 1377.4680     | 3080.8896     |
| TOTAL GAS MASS (KG,LBM)                                         | WGTOT                | 12.663007     | 27.917152     |
| RATIO OF SPECIFIC HEATS                                         | GAMA                 | 1.1591447     | 1.1591447     |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)                      | AMW                  | 12.683985     | 27.963401     |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)                      | CSTAR                | 1546.1403     | 5072.6387     |
| MAXIMUM CHAMBER MACH NUMBER                                     | AMPN                 | 0.90014896-01 | 0.90014896-01 |
| <b>HEAD END PARAMETERS:</b>                                     |                      |               |               |
| TOTAL PRESSURE (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> )         | PH                   | 3447999.7     | 5.0009007     |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPHDT                | 0.53270536+11 | 77262.384     |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AHH                  | 0.24697974    | 382.81937     |
| BURN RATE (M/S,IN/S)                                            | RBZ(1)               | 0.17380361-02 | 0.68426618-01 |
| DISTANCE BURNED (M,IN)                                          | TAUZ(1)              | 1.1088878     | 43.657501     |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFH                  | 0.22269119    | 13589.450     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPH                  | 54.881141     | 3349052.7     |
| GAS STATIC TEMPERATURE (DEG K,DEG R)                            | PRNT(1,3)            | 3282.7013     | 5908.8623     |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>                          |                      |               |               |
| RADIAL BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )             | ABCYL                | 3.2237444     | 4996.8139     |
| SEGMENT FACE BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )       | ABSL0T               | 0.00000000    | 0.00000000    |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFCYL                | 2.3915421     | 145940.85     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VP                   | 288.09527     | 17580652.     |
| <b>AFT END PARAMETERS:</b>                                      |                      |               |               |
| TOTAL PRESSURE NOZ ENT (N/M <sup>2</sup> ,LBF/IN <sup>2</sup> ) | PON                  | 3418045.2     | 4.9574555     |
| PRESSURE INTEGRAL (N·S/M <sup>2</sup> ,LBF·S/IN <sup>2</sup> )  | SPONDT               | 0.53056562+11 | 73761.207     |
| BURN AREA (M <sup>2</sup> ,IN <sup>2</sup> )                    | AAN                  | 0.02100000    | 0.00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)                                | RBZ(NI+1,1)          | 0.17254418-02 | 0.67930781-01 |
| BURN RATE, REGION B (M/S,IN/SEC)                                | RBZ(NI+2,1)          | 0.17238364-02 | 0.67868756-01 |
| DISTANCE BURNED, REGION A (M,IN)                                | TAUZ(NI+1,1)         | 0.74828480    | 29.465000     |
| DISTANCE BURNED, REGION B (M,IN)                                | TAUZ(NI+2,1)         | 0.52501800    | 20.670000     |
| PROPELLANT VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )            | VFN                  | 0.19662722-02 | 119.98929     |
| GAS VOLUME (M <sup>3</sup> ,IN <sup>3</sup> )                   | VPN                  | 17.047463     | 1040355.0     |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)                          | PRNT(NI+2,3)         | 3282.7266     | 5908.9078     |
| PORT AREA, NOZ ENT (M <sup>2</sup> ,IN <sup>2</sup> )           | AZA                  | 10.208839     | 15823.733     |
| <b>NOZZLE PARAMETERS:</b>                                       |                      |               |               |
| THROAT AREA (M <sup>2</sup> ,IN <sup>2</sup> )                  | AT                   | 1.6023536     | 2483.6530     |
| EXPANSION RATIO                                                 | EPR                  | 6.7079545     | 6.7079545     |
| PRESSURE RATIO                                                  | PEPO                 | 0.23581242-01 | 0.23581242-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>                                |                      |               |               |
| ANISOTROPIC BURN RATE COEFFICIENT                               | AKRST                | 0.37810250-01 | 0.37810250-01 |
| NUMBER OF PRESSURE ITERATIONS                                   | ANLPS                | 3.0000000     | 3.0000000     |

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OF POOR QUALITY

INCREMENT DIVIDING PLANE DATA:

| MASS<br>ADDITION<br>SECTIONS | PO   | PSIA | P    | PSIA | DEG. R  | T | U      | H    | LP     | INCHES   | SO. IN. | WDOT<br>LB/SEC | DWDOT<br>LB/SEC | DW/DT<br>LB/SEC | RB<br>IN/SEC | TAU<br>IN. | RBTO<br>IN/SEC | TAUTO<br>IN. |
|------------------------------|------|------|------|------|---------|---|--------|------|--------|----------|---------|----------------|-----------------|-----------------|--------------|------------|----------------|--------------|
| FORE                         | 5.00 | 5.00 | 5.00 | 5.00 | 5908.86 |   | 40.39  | .012 | 227.23 | 16445.07 |         | 10.17          | 1.66            | -8.51           | .0682        | 43.657     | .000           | .000         |
| 15.000                       | 5.00 | 5.00 | 5.00 | 5.00 | 5908.50 |   | 15.12  | .030 | 227.32 | 16448.41 |         | 26.46          | 15.66           | -.63            | .0682        | 43.598     | .000           | .000         |
| 30.000                       | 5.00 | 5.00 | 5.00 | 5.00 | 5908.26 |   | 131.00 | .038 | 170.52 | 16449.92 |         | 32.96          | 5.87            | -.64            | .0682        | 43.559     | .000           | .000         |
| 45.000                       | 5.00 | 5.00 | 5.00 | 5.00 | 5908.24 |   | 133.48 | .038 | .00    | 16452.74 |         | 33.58          | .00             | -.63            | .0682        | 43.509     | .000           | .000         |
| 60.000                       | 5.00 | 5.00 | 5.00 | 5.00 | 5908.21 |   | 135.93 | .039 | .00    | 16454.96 |         | 34.21          | .00             | -.63            | .0682        | 43.460     | .000           | .000         |
| 75.000                       | 5.00 | 5.00 | 5.00 | 5.00 | 5908.19 |   | 138.40 | .040 | .00    | 16457.17 |         | 34.84          | .00             | -.63            | .0682        | 43.411     | .000           | .000         |
| 90.000                       | 5.00 | 5.00 | 5.00 | 5.00 | 5908.16 |   | 140.87 | .040 | .00    | 16459.37 |         | 35.46          | .00             | -.63            | .0682        | 43.362     | .000           | .000         |
| 105.000                      | 5.00 | 5.00 | 5.00 | 5.00 | 5908.13 |   | 143.34 | .041 | .00    | 16461.57 |         | 36.09          | .00             | -.63            | .0682        | 43.313     | .000           | .000         |
| 115.761                      | 5.00 | 5.00 | 5.00 | 5.00 | 5908.11 |   | 145.28 | .042 | .00    | 16463.29 |         | 36.58          | .00             | -.49            | .0682        | 43.366     | .000           | .000         |
| 116.771                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.58 |   | 186.52 | .053 | .00    | 12831.49 |         | 36.58          | .00             | -.00            | .0682        | 43.274     | .000           | .000         |
| 131.771                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.89 |   | 163.84 | .047 | .00    | 14817.96 |         | 37.11          | .00             | -.53            | .0682        | 43.307     | .000           | .000         |
| 143.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5908.06 |   | 149.70 | .043 | .00    | 16429.00 |         | 37.59          | .00             | -.48            | .0682        | 43.334     | .000           | .000         |
| 154.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5908.03 |   | 152.08 | .044 | .00    | 16440.39 |         | 38.21          | .00             | -.63            | .0682        | 43.226     | .000           | .000         |
| 173.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5908.00 |   | 154.46 | .044 | .00    | 16451.70 |         | 38.84          | .00             | -.63            | .0682        | 43.118     | .000           | .000         |
| 180.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.98 |   | 156.85 | .045 | .00    | 16462.95 |         | 39.47          | .00             | -.63            | .0682        | 43.009     | .000           | .000         |
| 203.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.95 |   | 159.23 | .046 | .00    | 16474.13 |         | 40.09          | .00             | -.63            | .0682        | 42.901     | .000           | .000         |
| 215.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.92 |   | 161.61 | .046 | .00    | 16485.23 |         | 40.72          | .00             | -.63            | .0682        | 42.885     | .000           | .000         |
| 233.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.89 |   | 163.99 | .047 | .00    | 16496.27 |         | 41.35          | .00             | -.63            | .0682        | 42.876     | .000           | .000         |
| 248.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.86 |   | 166.36 | .048 | .00    | 16507.23 |         | 42.00          | .00             | -.63            | .0682        | 42.868     | .000           | .000         |
| 263.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.83 |   | 168.74 | .048 | .00    | 16518.13 |         | 43.23          | .00             | -.63            | .0682        | 42.860     | .000           | .000         |
| 270.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.80 |   | 171.12 | .049 | .00    | 16528.95 |         | 43.86          | .00             | -.63            | .0682        | 42.852     | .000           | .000         |
| 293.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.76 |   | 173.49 | .050 | .00    | 16539.71 |         | 44.49          | .00             | -.63            | .0682        | 42.844     | .000           | .000         |
| 308.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.73 |   | 175.87 | .050 | .00    | 16550.39 |         | 45.12          | .00             | -.63            | .0682        | 42.835     | .000           | .000         |
| 323.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.70 |   | 178.24 | .051 | .00    | 16561.01 |         | 45.75          | .00             | -.63            | .0682        | 42.827     | .000           | .000         |
| 338.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.67 |   | 180.62 | .052 | .00    | 16571.56 |         | 46.38          | .00             | -.63            | .0682        | 42.819     | .000           | .000         |
| 353.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.63 |   | 182.99 | .052 | .00    | 16582.03 |         | 47.01          | .00             | -.63            | .0682        | 42.810     | .000           | .000         |
| 368.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.60 |   | 185.36 | .053 | .00    | 16592.44 |         | 47.64          | .00             | -.63            | .0682        | 42.802     | .000           | .000         |
| 383.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.57 |   | 187.73 | .054 | .00    | 16602.77 |         | 48.27          | .00             | -.63            | .0682        | 42.794     | .000           | .000         |
| 398.919                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.53 |   | 190.11 | .054 | .00    | 16613.04 |         | 48.90          | .00             | -.63            | .0682        | 42.786     | .000           | .000         |
| 403.048                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.52 |   | 192.48 | .055 | .00    | 16615.85 |         | 49.53          | .00             | -.63            | .0682        | 42.778     | .000           | .000         |
| 410.048                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.46 |   | 194.86 | .056 | .00    | 16619.10 |         | 49.88          | .00             | -.63            | .0682        | 42.770     | .000           | .000         |
| 427.051                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.42 |   | 197.49 | .057 | .00    | 16621.45 |         | 49.45          | .00             | -.38            | .0682        | 42.762     | .000           | .000         |
| 427.061                      | 5.00 | 5.00 | 5.00 | 5.00 | 5906.88 |   | 233.12 | .066 | .00    | 14067.75 |         | 49.45          | .00             | -.00            | .0682        | 42.754     | .000           | .000         |
| 442.061                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.09 |   | 218.03 | .062 | .00    | 15014.56 |         | 50.01          | .00             | -.55            | .0682        | 42.746     | .000           | .000         |
| 457.061                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.27 |   | 206.93 | .059 | .00    | 16006.74 |         | 50.59          | .00             | -.59            | .0682        | 42.738     | .000           | .000         |
| 463.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.34 |   | 202.65 | .058 | .00    | 16426.16 |         | 50.85          | .00             | -.25            | .0682        | 42.730     | .000           | .000         |
| 472.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.30 |   | 205.17 | .059 | .00    | 16428.27 |         | 51.47          | .00             | -.62            | .0682        | 42.722     | .000           | .000         |
| 483.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.26 |   | 207.69 | .060 | .00    | 16430.38 |         | 52.09          | .00             | -.62            | .0682        | 42.714     | .000           | .000         |
| 500.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.22 |   | 210.21 | .060 | .00    | 16432.49 |         | 52.72          | .00             | -.62            | .0682        | 42.706     | .000           | .000         |
| 523.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.18 |   | 212.73 | .061 | .00    | 16434.61 |         | 53.34          | .00             | -.62            | .0682        | 42.698     | .000           | .000         |
| 538.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.14 |   | 215.25 | .062 | .00    | 16436.73 |         | 53.96          | .00             | -.62            | .0682        | 42.690     | .000           | .000         |
| 553.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.09 |   | 217.77 | .062 | .00    | 16438.84 |         | 54.58          | .00             | -.62            | .0682        | 42.682     | .000           | .000         |
| 568.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.05 |   | 220.29 | .063 | .00    | 16440.96 |         | 55.21          | .00             | -.62            | .0682        | 42.674     | .000           | .000         |
| 583.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5907.01 |   | 222.81 | .063 | .00    | 16443.08 |         | 55.83          | .00             | -.62            | .0682        | 42.666     | .000           | .000         |
| 598.204                      | 5.00 | 5.00 | 5.00 | 5.00 | 5906.97 |   | 225.34 | .065 | .00    | 16445.21 |         | 56.45          | .00             | -.62            | .0682        | 42.658     | .000           | .000         |
| 613.214                      | 5.00 | 5.00 | 5.00 | 5.00 | 5906.92 |   | 227.86 | .065 | .00    | 16447.33 |         | 57.07          | .00             | -.62            | .0682        | 42.650     | .000           | .000         |

DATE 071076

|          |      |      |         |        |      |    |          |       |      |       |       |        |       |      |
|----------|------|------|---------|--------|------|----|----------|-------|------|-------|-------|--------|-------|------|
| 625-224  | 5-00 | 4-99 | 5906-88 | 230-38 | 0-66 | 00 | 16394-46 | 57-70 | 0-00 | -62   | 0-682 | 42-172 | 0-000 | 0-00 |
| 643-224  | 5-00 | 4-99 | 5906-83 | 232-91 | 0-67 | 00 | 16391-58 | 58-32 | 0-00 | -62   | 0-682 | 42-064 | 0-000 | 0-00 |
| 658-204  | 5-00 | 4-99 | 5906-79 | 235-43 | 0-67 | 00 | 16388-71 | 58-94 | 0-00 | -62   | 0-682 | 41-955 | 0-000 | 0-00 |
| 673-204  | 5-00 | 4-99 | 5906-74 | 237-96 | 0-68 | 00 | 16385-85 | 59-56 | 0-00 | -62   | 0-682 | 41-847 | 0-000 | 0-00 |
| 688-204  | 5-00 | 4-99 | 5906-69 | 240-48 | 0-69 | 00 | 16382-98 | 60-19 | 0-00 | -62   | 0-682 | 41-738 | 0-000 | 0-00 |
| 703-204  | 5-00 | 4-99 | 5906-65 | 243-51 | 0-70 | 00 | 16380-11 | 60-81 | 0-00 | -62   | 0-682 | 41-630 | 0-000 | 0-00 |
| 718-204  | 5-00 | 4-99 | 5906-60 | 245-53 | 0-70 | 00 | 16377-25 | 61-43 | 0-00 | -62   | 0-682 | 41-522 | 0-000 | 0-00 |
| 725-171  | 5-00 | 4-99 | 5906-57 | 246-88 | 0-71 | 00 | 16375-73 | 61-78 | 0-00 | -33   | 0-682 | 41-464 | 0-000 | 0-00 |
| 741-171  | 5-00 | 4-99 | 5906-53 | 249-25 | 0-71 | 00 | 16382-80 | 62-38 | 0-00 | -62   | 0-682 | 41-140 | 0-000 | 0-00 |
| 745-336  | 5-00 | 4-99 | 5906-51 | 250-07 | 0-72 | 00 | 16385-20 | 62-60 | 0-00 | -21   | 0-682 | 41-240 | 0-000 | 0-00 |
| 745-346  | 5-00 | 4-98 | 5905-77 | 285-79 | 0-82 | 00 | 16394-56 | 62-60 | 0-00 | -00   | 0-681 | 41-029 | 0-000 | 0-00 |
| 761-346  | 5-00 | 4-98 | 5905-98 | 276-35 | 0-79 | 00 | 16372-15 | 63-15 | 0-00 | -56   | 0-681 | 41-104 | 0-000 | 0-00 |
| 770-346  | 5-00 | 4-98 | 5906-16 | 267-72 | 0-77 | 00 | 16377-03 | 63-73 | 0-00 | -58   | 0-681 | 41-179 | 0-000 | 0-00 |
| 771-346  | 5-00 | 4-98 | 5906-32 | 259-81 | 0-74 | 00 | 16224-19 | 64-33 | 0-00 | -60   | 0-681 | 41-253 | 0-000 | 0-00 |
| 774-631  | 5-00 | 4-98 | 5906-35 | 258-07 | 0-74 | 00 | 16370-23 | 64-48 | 0-00 | -14   | 0-681 | 41-270 | 0-000 | 0-00 |
| 804-631  | 5-00 | 4-98 | 5906-30 | 260-66 | 0-75 | 00 | 16363-57 | 65-10 | 0-00 | -62   | 0-681 | 41-093 | 0-000 | 0-00 |
| 824-631  | 5-00 | 4-98 | 5906-25 | 263-25 | 0-75 | 00 | 16356-92 | 65-72 | 0-00 | -62   | 0-681 | 40-916 | 0-000 | 0-00 |
| 834-631  | 5-00 | 4-98 | 5906-20 | 265-84 | 0-76 | 00 | 16350-28 | 66-34 | 0-00 | -62   | 0-681 | 40-739 | 0-000 | 0-00 |
| 854-701  | 5-00 | 4-98 | 5906-14 | 268-42 | 0-77 | 00 | 16343-67 | 66-96 | 0-00 | -62   | 0-681 | 40-563 | 0-000 | 0-00 |
| 854-701  | 5-00 | 4-98 | 5906-08 | 271-36 | 0-78 | 00 | 16315-82 | 67-58 | 0-00 | -62   | 0-681 | 39-794 | 0-000 | 0-00 |
| 854-701  | 5-00 | 4-98 | 5906-02 | 274-31 | 0-79 | 00 | 16287-96 | 68-20 | 0-00 | -62   | 0-681 | 39-025 | 0-000 | 0-00 |
| 874-701  | 5-00 | 4-98 | 5905-96 | 277-27 | 0-79 | 00 | 16260-09 | 68-81 | 0-00 | -62   | 0-681 | 38-255 | 0-000 | 0-00 |
| 914-701  | 5-00 | 4-98 | 5905-89 | 280-23 | 0-80 | 00 | 16232-22 | 69-43 | 0-00 | -62   | 0-681 | 37-486 | 0-000 | 0-00 |
| 924-701  | 5-00 | 4-98 | 5905-83 | 283-19 | 0-81 | 00 | 16204-33 | 70-04 | 0-00 | -62   | 0-681 | 36-717 | 0-000 | 0-00 |
| 944-701  | 5-00 | 4-98 | 5905-76 | 286-16 | 0-82 | 00 | 16176-44 | 70-66 | 0-00 | -61   | 0-681 | 35-948 | 0-000 | 0-00 |
| 954-701  | 5-00 | 4-98 | 5905-70 | 289-14 | 0-83 | 00 | 16148-55 | 71-27 | 0-00 | -61   | 0-681 | 35-178 | 0-000 | 0-00 |
| 974-701  | 5-00 | 4-98 | 5905-63 | 292-13 | 0-84 | 00 | 16120-65 | 71-88 | 0-00 | -61   | 0-681 | 34-409 | 0-000 | 0-00 |
| 984-701  | 5-00 | 4-98 | 5905-56 | 295-12 | 0-85 | 00 | 16092-74 | 72-49 | 0-00 | -61   | 0-681 | 33-640 | 0-000 | 0-00 |
| 1034-701 | 5-00 | 4-98 | 5905-50 | 298-11 | 0-85 | 00 | 16064-82 | 73-10 | 0-00 | -61   | 0-681 | 32-871 | 0-000 | 0-00 |
| 1034-701 | 5-00 | 4-98 | 5905-43 | 301-12 | 0-86 | 00 | 16036-89 | 73-71 | 0-00 | -61   | 0-681 | 32-101 | 0-000 | 0-00 |
| 1034-701 | 5-00 | 4-98 | 5905-36 | 304-12 | 0-87 | 00 | 16008-96 | 74-32 | 0-00 | -61   | 0-681 | 31-332 | 0-000 | 0-00 |
| 1044-701 | 5-00 | 4-98 | 5905-33 | 307-13 | 0-88 | 00 | 15997-77 | 74-56 | 0-00 | -24   | 0-681 | 31-024 | 0-000 | 0-00 |
| 1054-701 | 5-00 | 4-98 | 5905-26 | 310-13 | 0-88 | 00 | 15969-64 | 75-17 | 0-00 | -61   | 0-681 | 30-483 | 0-000 | 0-00 |
| 1074-701 | 5-00 | 4-98 | 5905-18 | 313-17 | 0-89 | 00 | 15941-80 | 75-78 | 0-00 | -61   | 0-681 | 29-942 | 0-000 | 0-00 |
| 1074-701 | 5-00 | 4-98 | 5905-12 | 314-08 | 0-90 | 00 | 15916-69 | 76-31 | 0-00 | -54   | 0-681 | 29-459 | 0-000 | 0-00 |
| AF(1A)   | 4-96 | 4-73 | 5870-89 | 942-57 | 0-85 | 00 | 15823-73 | 78-15 | 0-00 | -1-11 | 0-679 | 29-460 | 0-000 | 0-00 |
| AF(1b)   | 4-96 | 4-96 | 5908-91 | -4-55  | 0-81 | 00 | 15413-12 | 72    | 0-00 | -72   | 0-679 | 20-670 | 0-000 | 0-00 |

|          | SLOT<br>INTERFACE<br>LOCATION<br>IN. | P0<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDOT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | MSLOT<br>LB/SEC |
|----------|--------------------------------------|------------|-----------|-------------|-------------|---------------|-----------------|---------------|--------------|---------------------|-----------------|
| FOREWARD | 1.1676+02                            | 5.0004+00  | 4.9954+00 | 5.9081+03   | 1.4530+02   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 3.6581+01       |
| AFT      | 1.1677+02                            | 4.9968+00  | 4.9917+00 | 5.9076+03   | 1.4540+02   | 1.6460+04     | 0.0000          | 0.0000        | 0.0000       | 0.0000              | 3.6581+01       |

GAS BUILDUP IN SLOT, DW/DT = -4.1763-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 4.2705+02 | 5.0010+00 | 4.9917+00 | 5.9074+03 | 1.9748+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.9452+01 |
| AFT      | 4.2706+02 | 4.9974+00 | 4.9882+00 | 5.9067+03 | 1.9760+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4.9452+01 |

GAS BUILDUP IN SLOT, DW/DT = -4.1547-04

|          |           |           |           |           |           |           |        |        |        |        |           |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|--------|--------|--------|-----------|
| FOREWARD | 7.4634+02 | 5.0030+00 | 4.9882+00 | 5.9065+03 | 2.5010+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.2595+01 |
| AFT      | 7.4635+02 | 4.9982+00 | 4.9833+00 | 5.9058+03 | 2.5032+02 | 1.6383+04 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6.2596+01 |

GAS BUILDUP IN SLOT, DW/DT = -4.1456-04

|                                  |                  |              |           |               |                                        |          |         |        |        |
|----------------------------------|------------------|--------------|-----------|---------------|----------------------------------------|----------|---------|--------|--------|
| REB BURNOUT INCREMENT LOCATION = | 15.0000          | SECTOR NO. = | 5         | TAU =         | 43.6078                                | TAUWDP = | 43.6078 | TIME = | 120.00 |
| REB BURNOUT INCREMENT LOCATION = | 15.0000          | SECTOR NO. = | 6         | TAU =         | 43.6078                                | TAUWDP = | 43.6078 | TIME = | 120.00 |
| REB BURNOUT INCREMENT LOCATION = | 15.0000          | SECTOR NO. = | 7         | TAU =         | 43.6078                                | TAUWDP = | 43.6078 | TIME = | 120.00 |
| REB BURNOUT INCREMENT LOCATION = | 15.0000          | SECTOR NO. = | 8         | TAU =         | 43.6078                                | TAUWDP = | 43.6078 | TIME = | 120.00 |
| REB BURNOUT INCREMENT LOCATION = | 463.2040         | SECTOR NO. = | 6         | TAU =         | 43.3640                                | TAUWDP = | 43.3640 | TIME = | 120.00 |
| REB BURNOUT INCREMENT LOCATION = | 463.2040         | SECTOR NO. = | 7         | TAU =         | 43.3640                                | TAUWDP = | 43.3640 | TIME = | 120.00 |
| PAFTEN* TIME=120.50 IS=6 ZCALCI  | 21= 15.00 ZCALCI | 11=          | 00 AINCW= | 13.36 AINCHI= | 00 DELZ=13.362 ALP=454.70 ALPHI=454.60 |          |         |        |        |
| PAFTEN* TIME=120.50 IS=7 ZCALCI  | 21= 15.00 ZCALCI | 11=          | 00 AINCW= | 11.57 AINCHI= | 00 DELZ=11.566 ALP=454.70 ALPHI=454.62 |          |         |        |        |
| PAFTEN* TIME=120.50 IS=6 ZCALCI  | 21= 15.00 ZCALCI | 11=          | 00 AINCW= | 13.36 AINCHI= | 00 DELZ=13.362 ALP=454.70 ALPHI=454.60 |          |         |        |        |
| PAFTEN* TIME=120.50 IS=7 ZCALCI  | 21= 15.00 ZCALCI | 11=          | 00 AINCW= | 11.57 AINCHI= | 00 DELZ=11.566 ALP=454.70 ALPHI=454.62 |          |         |        |        |
| PAFTEN* TIME=120.50 IS=6 ZCALCI  | 21= 15.00 ZCALCI | 11=          | 00 AINCW= | 13.36 AINCHI= | 00 DELZ=13.362 ALP=454.70 ALPHI=454.60 |          |         |        |        |
| PAFTEN* TIME=120.50 IS=7 ZCALCI  | 21= 15.00 ZCALCI | 11=          | 00 AINCW= | 11.57 AINCHI= | 00 DELZ=11.566 ALP=454.70 ALPHI=454.62 |          |         |        |        |
| REB BURNOUT INCREMENT LOCATION = | 0.0000           | SECTOR NO. = | 5         | TAU =         | 43.6570                                | TAUWDP = | 43.6570 | TIME = | 120.50 |
| REB BURNOUT INCREMENT LOCATION = | 0.0000           | SECTOR NO. = | 6         | TAU =         | 43.6570                                | TAUWDP = | 43.6570 | TIME = | 120.50 |
| REB BURNOUT INCREMENT LOCATION = | 0.0000           | SECTOR NO. = | 7         | TAU =         | 43.6570                                | TAUWDP = | 43.6570 | TIME = | 120.50 |
| REB BURNOUT INCREMENT LOCATION = | 0.0000           | SECTOR NO. = | 8         | TAU =         | 43.6570                                | TAUWDP = | 43.6570 | TIME = | 120.50 |

IGNITION TIME (S)

121.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 13012.503     | 2925.3451    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 16671.493     | 3747.9007    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | 26.972298     | 6.0636139    |
| DELIVERED TOTAL IMPULSE (N•S,LBF•S)        | SRMOTI               | .17334319+10  | .27728652+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 253.80496     | 253.80496    |
| VACUUM TOTAL IMPULSE (N•S,LBF•S)           | SRMVTI               | .12034663+10  | .20853475+09 |
| THRUST COEFFICIENT                         | CF                   | 1.6139113     | 1.6139113    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | WDOT                 | 6.6836562     | 14.734940    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SWDOTN               | 595398.93     | 1114213.9    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | .14475837-01  | .31913757-01 |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 16.275896     | 35.882208    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | .22223643-04  | .34446716-01 |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 2.6338470     | 158896.49    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 1393.5955     | 3072.3522    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | 2.3913109     | 5.2719381    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1591409     | 1.1591409    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.682733     | 27.960640    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1546.0318     | 5372.2027    |
| MAXIMUM CHAMBER MACH NUMBER                | ANPN                 | .89065015-01  | .89065015-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 649110.61     | .94145535    |
| PRESSURE INTEGRAL (N•S/M**2,LBF•S/IN**2)   | SPHDT                | .53272346+11  | 77265.006    |
| BURN AREA (M**2,IN**2)                     | AHH                  | .22223643-04  | .34446716-01 |
| BURN RATE (M/S,IN/S)                       | RUZ(1)               | .96875073-03  | .38139793-01 |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.1088878     | 43.657001    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .22245753     | 13575.191    |
| GAS VOLUME (M**3,IN**3)                    | VPH                  | 54.881374     | 3349066.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PKNT(1,3)            | 3281.8185     | 5907.2734    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| INITIAL BURN AREA (M**2,IN**2)             | ABCYL                | .00000000     | .00000000    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSLOT               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 2.3794232     | 145201.31    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 288.68473     | 17616623.    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 644664.37     | .93503663    |
| PRESSURE INTEGRAL (N•S/M**2,LBF•S/IN**2)   | SPONDT               | .50858355+11  | 73763.809    |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RUZ(NI+1,1)          | .96238696-03  | .37887251-01 |
| BURN RATE, REGION B (M/S,IN/SEC)           | RUZ(NI+2,1)          | .96149669-03  | .37854201-01 |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74828400     | 29.463300    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501803     | 20.677300    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PKNT(NI+2,3)         | 3281.8658     | 5907.3583    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | A2A                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.6323639     | 2483.6691    |
| EXPANSION RATIO                            | EPR                  | 6.7879111     | 6.7879111    |
| PRESSURE RATIO                             | PEPO                 | .24451059-01  | .24451059-01 |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLPS                | 3.0000000     | 3.0000000    |

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OF POOR QUALITY





DATE 071076

|          |     |         |        |      |     |          |       |     |     |       |        |       |       |
|----------|-----|---------|--------|------|-----|----------|-------|-----|-----|-------|--------|-------|-------|
| 625-204  | .94 | 5905-88 | 195.76 | .056 | .00 | 16395-15 | 9.25  | .00 | .00 | .0380 | 42.172 | .0000 | .0000 |
| 653-204  | .94 | 5905-83 | 199.33 | .057 | .00 | 16392-17 | 9.41  | .00 | .00 | .0380 | 42.064 | .0000 | .0000 |
| 654-204  | .94 | 5905-77 | 202.90 | .058 | .00 | 16389-20 | 9.58  | .00 | .00 | .0380 | 41.955 | .0000 | .0000 |
| 673-204  | .94 | 5905-72 | 206.47 | .059 | .00 | 16386-22 | 9.75  | .00 | .00 | .0380 | 41.847 | .0000 | .0000 |
| 688-204  | .94 | 5905-66 | 210.05 | .060 | .00 | 16383-25 | 9.91  | .00 | .00 | .0380 | 41.738 | .0000 | .0000 |
| 703-204  | .94 | 5905-60 | 213.62 | .061 | .00 | 16380-28 | 10.08 | .00 | .00 | .0380 | 41.630 | .0000 | .0000 |
| 713-204  | .94 | 5905-54 | 217.19 | .062 | .00 | 16377-31 | 10.25 | .00 | .00 | .0380 | 41.522 | .0000 | .0000 |
| 726-191  | .94 | 5905-51 | 219.10 | .063 | .00 | 16375-73 | 10.34 | .00 | .00 | .0380 | 41.464 | .0000 | .0000 |
| 741-191  | .94 | 5905-45 | 222.53 | .064 | .00 | 16382-80 | 10.50 | .00 | .00 | .0380 | 41.140 | .0000 | .0000 |
| 746-336  | .94 | 5905-43 | 223.71 | .064 | .00 | 16385-20 | 10.56 | .00 | .00 | .0380 | 41.240 | .0000 | .0000 |
| 745-346  | .94 | 5904-84 | 255.63 | .073 | .00 | 16349-56 | 10.56 | .00 | .00 | .0380 | 41.029 | .0000 | .0000 |
| 761-346  | .94 | 5904-98 | 248.46 | .071 | .00 | 16347-15 | 10.71 | .00 | .00 | .0380 | 41.104 | .0000 | .0000 |
| 775-346  | .94 | 5905-10 | 241.98 | .069 | .00 | 16347-03 | 10.87 | .00 | .00 | .0380 | 41.176 | .0000 | .0000 |
| 781-346  | .94 | 5905-21 | 236.10 | .068 | .00 | 16224-19 | 11.03 | .00 | .00 | .0380 | 41.253 | .0000 | .0000 |
| 794-231  | .94 | 5905-23 | 234.81 | .067 | .00 | 16373-23 | 11.07 | .00 | .00 | .0380 | 41.270 | .0000 | .0000 |
| 807-231  | .94 | 5905-17 | 238.44 | .068 | .00 | 16303-57 | 11.23 | .00 | .00 | .0380 | 41.093 | .0000 | .0000 |
| 827-231  | .94 | 5905-10 | 242.07 | .069 | .00 | 16356-92 | 11.40 | .00 | .00 | .0380 | 40.916 | .0000 | .0000 |
| 837-231  | .94 | 5905-03 | 245.70 | .070 | .00 | 16350-28 | 11.57 | .00 | .00 | .0380 | 40.739 | .0000 | .0000 |
| 854-781  | .94 | 5904-96 | 249.32 | .071 | .00 | 16343-67 | 11.73 | .00 | .00 | .0380 | 40.563 | .0000 | .0000 |
| 869-781  | .94 | 5904-89 | 253.28 | .073 | .00 | 16315-82 | 11.90 | .00 | .00 | .0380 | 39.794 | .0000 | .0000 |
| 884-781  | .94 | 5904-81 | 257.25 | .074 | .00 | 16287-96 | 12.06 | .00 | .00 | .0380 | 39.025 | .0000 | .0000 |
| 897-781  | .94 | 5904-73 | 261.23 | .075 | .00 | 16260-99 | 12.23 | .00 | .00 | .0380 | 38.255 | .0000 | .0000 |
| 915-781  | .94 | 5904-65 | 265.21 | .076 | .00 | 16232-22 | 12.40 | .00 | .00 | .0380 | 37.486 | .0000 | .0000 |
| 927-781  | .94 | 5904-57 | 269.20 | .077 | .00 | 16204-33 | 12.56 | .00 | .00 | .0380 | 36.717 | .0000 | .0000 |
| 944-781  | .94 | 5904-48 | 273.20 | .078 | .00 | 16176-44 | 12.73 | .00 | .00 | .0380 | 35.948 | .0000 | .0000 |
| 957-781  | .94 | 5904-40 | 277.21 | .079 | .00 | 16148-55 | 12.89 | .00 | .00 | .0380 | 35.178 | .0000 | .0000 |
| 972-781  | .94 | 5904-31 | 281.22 | .081 | .00 | 16120-65 | 13.05 | .00 | .00 | .0380 | 34.409 | .0000 | .0000 |
| 987-781  | .94 | 5904-22 | 285.24 | .082 | .00 | 16092-74 | 13.22 | .00 | .00 | .0380 | 33.640 | .0000 | .0000 |
| 1007-781 | .94 | 5904-13 | 289.26 | .083 | .00 | 16064-82 | 13.38 | .00 | .00 | .0380 | 32.871 | .0000 | .0000 |
| 1017-781 | .94 | 5904-04 | 293.31 | .084 | .00 | 16036-89 | 13.55 | .00 | .00 | .0380 | 32.101 | .0000 | .0000 |
| 1037-781 | .94 | 5903-95 | 297.36 | .085 | .00 | 16008-96 | 13.71 | .00 | .00 | .0380 | 31.332 | .0000 | .0000 |
| 1057-781 | .94 | 5903-86 | 298.98 | .086 | .00 | 15997-77 | 13.77 | .00 | .00 | .0380 | 31.024 | .0000 | .0000 |
| 1073-781 | .94 | 5903-82 | 303.04 | .087 | .00 | 15969-84 | 13.94 | .00 | .00 | .0380 | 30.463 | .0000 | .0000 |
| 1073-791 | .94 | 5903-72 | 307.11 | .088 | .00 | 15941-80 | 14.10 | .00 | .00 | .0380 | 29.942 | .0000 | .0000 |
| 1074-171 | .94 | 5903-64 | 310.74 | .089 | .00 | 15916-69 | 14.24 | .00 | .00 | .0380 | 29.459 | .0000 | .0000 |
| AF1(A)   | .94 | 5869-35 | 972.50 | .285 | .00 | 15823-73 | 14.73 | .00 | .00 | .0379 | 29.460 | .0000 | .0000 |
| AF1(B)   | .93 | 5907-36 | -6.48  | .032 | .00 | 10913-12 | .19   | .00 | .00 | .0379 | 20.670 | .0000 | .0000 |

SLOT  
INTERFACE  
LOCATION  
IN.

PSIA P T DEG. K FT/SEC SQ. IN. LB/SEC DWDOT SQ. IN. IN/SEC RB DELTA TAU IN. #SLOT LB/SEC

FOREWARD 1.1676+02 9.4150-01 9.4125-01 5.9071+03 7.5565+01 1.6460+04 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 3.5849+00  
AFT 1.1677+02 9.4132-01 9.4126-01 5.9070+03 7.5561+01 1.6460+04 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 3.5849+00

GAS BUILDUP IN SLOT, Dn/Dt = -1.1188-04

FOREWARD 4.2705+02 9.4206-01 9.4100-01 5.9065+03 1.4098+02 1.6383+04 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 7.0335+00  
AFT 4.2706+02 9.4128-01 9.4068-01 5.9062+03 1.4093+02 1.6383+04 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 7.0336+00

GAS BUILDUP IN SLOT, Dn/Dt = -1.1132-04

FOREWARD 7.4634+02 9.4292-01 9.4268-01 5.9054+03 2.2374+02 1.6383+04 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0561+01  
AFT 7.4635+02 9.4219-01 9.4395-01 5.9048+03 2.2370+02 1.6383+04 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0561+01

GAS BUILDUP IN SLOT, Dn/Dt = -1.1126-04

IGNITION TIME, TIME (S)

122.00000

| PARAMETER DESCRIPTION (UNITS)              | PROGRAM NOMENCLATURE | INTERNATIONAL | ENGLISH      |
|--------------------------------------------|----------------------|---------------|--------------|
| <b>MOTOR PARAMETERS:</b>                   |                      |               |              |
| TOTAL DELIVERED THRUST (N,LBF)             | FTDEL                | 1537.2013     | 345.57661    |
| TOTAL VACUUM THRUST (N,LBF)                | FTVAC                | 2390.8994     | 537.49558    |
| THRUST CONTRIBUTION OF INERTS (N,LBF)      | FI                   | .00000000     | .00000000    |
| DELIVERED TOTAL IMPULSE (N*S,LBF*S)        | SRMDTI               | .12334378+10  | .27729785+09 |
| TOTAL VACUUM SPECIFIC IMPULSE (S,S)        | TISP                 | 212.70221     | 212.70221    |
| VACUUM TOTAL IMPULSE (N*S,LBF*S)           | SRMVTI               | .12834743+10  | .28053649+09 |
| THRUST COEFFICIENT                         | CF                   | 1.3492766     | 1.3492766    |
| GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S) | MDOT                 | 1.1462217     | 2.5269863    |
| FLOWRATE INTEGRAL (KG,LBM)                 | SMDOTN               | 505402.27     | 1114221.3    |
| INERT MASS FLOWRATE (KG/S,LBM/S)           | MIF                  | .00000000     | .00000000    |
| INERT MASS REMAINING (KG,LBM)              | MIR                  | 16.275096     | 35.882208    |
| TOTAL BURN AREA (M**2,IN**2)               | ABTOT                | .22223643-04  | .34446716-01 |
| TOTAL PROPELLANT VOLUME (M**3,IN**3)       | VF                   | 2.6030470     | 158896.49    |
| PROPELLANT MASS REMAINING (KG,LBM)         | WF                   | 1393.5955     | 3072.3522    |
| TOTAL GAS MASS (KG,LBM)                    | WGTOT                | .41321626     | .90437205    |
| RATIO OF SPECIFIC HEATS                    | GAMA                 | 1.1591402     | 1.1591402    |
| MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE) | AMW                  | 12.682492     | 27.960110    |
| CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S) | CSTAR                | 1546.0109     | 5072.2142    |
| MAXIMUM CHAMBER MACH NUMBER                | AMPN                 | .89340121-01  | .89040121-01 |
| <b>HEAD END PARAMETERS:</b>                |                      |               |              |
| TOTAL PRESSURE (N/M**2,LBF/IN**2)          | PH                   | 111347.60     | .16149616    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPHDT                | .53272670+11  | .7265.476    |
| BURN AREA (M**2,IN**2)                     | AMH                  | .22223643-04  | .34446716-01 |
| BURN RATE (M/S,IN/S)                       | RBZ(1)               | .52258374-03  | .20570100-01 |
| DISTANCE BURNED (M,IN)                     | TAUZ(1)              | 1.1088878     | 43.657001    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFH                  | .22245752     | 13575.190    |
| GAS VOLUME (M**3,IN**3)                    | VFH                  | 54.881374     | 3349066.9    |
| GAS STATIC TEMPERATURE (DEG K,DEG R)       | PRNT(1,3)            | 3281.6518     | 5906.9733    |
| <b>CYLINDRICAL SECTION PARAMETERS:</b>     |                      |               |              |
| NOZIAL BURN AREA (M**2,IN**2)              | ABCYL                | .00000000     | .00000000    |
| SEGMENT FACE BURN AREA (M**2,IN**2)        | ABSL0T               | .00000000     | .00000000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFCYL                | 2.3794232     | 145261.31    |
| GAS VOLUME (M**3,IN**3)                    | VP                   | 288.68473     | 17616623.    |
| <b>NOZ END PARAMETERS:</b>                 |                      |               |              |
| TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)  | PON                  | 110585.58     | .16039002    |
| PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)   | SPONDT               | .50858677+11  | .73764.275   |
| BURN AREA (M**2,IN**2)                     | AAN                  | .00000000     | .00000000    |
| BURN RATE, REGION A (M/S,IN/SEC)           | RBZ(NI+1,1)          | .51425075-03  | .20442943-01 |
| BURN RATE, REGION B (M/S,IN/SEC)           | RBZ(NI+2,1)          | .51877368-03  | .20424043-01 |
| DISTANCE BURNED, REGION A (M,IN)           | TAUZ(NI+1,1)         | .74820400     | 29.460000    |
| DISTANCE BURNED, REGION B (M,IN)           | TAUZ(NI+2,1)         | .52501000     | 20.670000    |
| PROPELLANT VOLUME (M**3,IN**3)             | VFN                  | .19662722-02  | 119.98929    |
| GAS VOLUME (M**3,IN**3)                    | VPN                  | 17.047463     | 1040300.0    |
| GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)     | PRNT(NI+2,3)         | 3281.7001     | 5907.0601    |
| PORT AREA, NOZ ENT (M**2,IN**2)            | AZA                  | 10.208839     | 15823.733    |
| <b>NOZZLE PARAMETERS:</b>                  |                      |               |              |
| THROAT AREA (M**2,IN**2)                   | AT                   | 1.4023663     | 2483.6728    |
| EXPANSION RATIO                            | EPR                  | 6.7079011     | 6.7079011    |
| PRESSURE RATIO                             | PEPO                 | .16468807     | .16468807    |
| <b>MISCELLANEOUS PARAMETERS:</b>           |                      |               |              |
| ANISOTROPIC BURN RATE COEFFICIENT          | AKRST                | .37810250-01  | .37810250-01 |
| NUMBER OF PRESSURE ITERATIONS              | ANLOPS               | 2.0000000     | 2.0000000    |

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OF POOR QUALITY

### BUCKENHUT DIVISION PLANE DATA:

| PASS<br>SECTION | P0  | P   | T       | U      | H    | LP  | AP       | WDOT | DWDOT | DM/DT | RB     |        | TAU    |      | TAUTO |
|-----------------|-----|-----|---------|--------|------|-----|----------|------|-------|-------|--------|--------|--------|------|-------|
|                 |     |     |         |        |      |     |          |      |       |       | IN/SEC | IN.    | IN/SEC | IN.  |       |
| PORT            |     |     |         |        |      |     |          |      |       |       |        |        |        |      |       |
| 15-000          | .16 | .16 | 5906.97 | 47.98  | .014 | .00 | 16456.72 | .39  | .00   | -.39  | .0205  | 43.657 | .0000  | .000 | .000  |
| 35-000          | .16 | .16 | 5906.96 | 51.51  | .015 | .00 | 16457.57 | .42  | .00   | -.03  | .0205  | 43.608 | .0000  | .000 | .000  |
| 45-000          | .16 | .16 | 5906.95 | 55.34  | .016 | .00 | 16458.42 | .45  | .00   | -.03  | .0205  | 43.559 | .0000  | .000 | .000  |
| 55-000          | .16 | .16 | 5906.93 | 58.57  | .017 | .00 | 16459.26 | .48  | .00   | -.03  | .0205  | 43.509 | .0000  | .000 | .000  |
| 65-000          | .16 | .16 | 5906.91 | 62.11  | .018 | .00 | 16460.11 | .51  | .00   | -.03  | .0205  | 43.460 | .0000  | .000 | .000  |
| 75-000          | .16 | .16 | 5906.90 | 65.64  | .019 | .00 | 16460.95 | .53  | .00   | -.03  | .0205  | 43.411 | .0000  | .000 | .000  |
| 85-000          | .16 | .16 | 5906.88 | 69.17  | .020 | .00 | 16461.83 | .56  | .00   | -.03  | .0205  | 43.362 | .0000  | .000 | .000  |
| 95-000          | .16 | .16 | 5906.86 | 72.70  | .021 | .00 | 16462.64 | .59  | .00   | -.03  | .0205  | 43.313 | .0000  | .000 | .000  |
| 105-000         | .16 | .16 | 5906.84 | 75.47  | .022 | .00 | 16463.29 | .61  | .00   | -.02  | .0205  | 43.266 | .0000  | .000 | .000  |
| 115-000         | .16 | .16 | 5906.70 | 96.86  | .028 | .00 | 12931.49 | .61  | .00   | -.00  | .0205  | 43.274 | .0000  | .000 | .000  |
| 131-000         | .16 | .16 | 5906.77 | 87.17  | .025 | .00 | 14817.96 | .64  | .00   | -.02  | .0205  | 43.307 | .0000  | .000 | .000  |
| 143-000         | .16 | .16 | 5906.81 | 81.35  | .023 | .00 | 16429.00 | .66  | .00   | -.02  | .0205  | 43.334 | .0000  | .000 | .000  |
| 150-000         | .16 | .16 | 5906.78 | 84.83  | .024 | .00 | 16440.39 | .69  | .00   | -.03  | .0205  | 43.226 | .0000  | .000 | .000  |
| 173-000         | .16 | .16 | 5906.76 | 88.30  | .025 | .00 | 16451.70 | .72  | .00   | -.03  | .0205  | 43.118 | .0000  | .000 | .000  |
| 182-000         | .16 | .16 | 5906.74 | 91.78  | .026 | .00 | 16462.95 | .75  | .00   | -.03  | .0205  | 43.009 | .0000  | .000 | .000  |
| 201-000         | .16 | .16 | 5906.71 | 95.25  | .027 | .00 | 16474.13 | .78  | .00   | -.03  | .0205  | 42.901 | .0000  | .000 | .000  |
| 210-000         | .16 | .16 | 5906.69 | 98.72  | .028 | .00 | 16485.23 | .80  | .00   | -.03  | .0205  | 42.793 | .0000  | .000 | .000  |
| 233-000         | .16 | .16 | 5906.66 | 102.19 | .029 | .00 | 16496.27 | .83  | .00   | -.03  | .0205  | 42.685 | .0000  | .000 | .000  |
| 243-000         | .16 | .16 | 5906.63 | 105.65 | .030 | .00 | 16507.23 | .86  | .00   | -.03  | .0205  | 42.576 | .0000  | .000 | .000  |
| 263-000         | .16 | .16 | 5906.60 | 109.12 | .031 | .00 | 16518.13 | .89  | .00   | -.03  | .0205  | 42.468 | .0000  | .000 | .000  |
| 276-000         | .16 | .16 | 5906.57 | 112.58 | .032 | .00 | 16528.95 | .92  | .00   | -.03  | .0205  | 42.360 | .0000  | .000 | .000  |
| 293-000         | .16 | .16 | 5906.54 | 116.04 | .033 | .00 | 16539.71 | .95  | .00   | -.03  | .0205  | 42.252 | .0000  | .000 | .000  |
| 304-000         | .16 | .16 | 5906.51 | 119.50 | .034 | .00 | 16550.39 | .98  | .00   | -.03  | .0205  | 42.143 | .0000  | .000 | .000  |
| 323-000         | .16 | .16 | 5906.48 | 122.96 | .035 | .00 | 16561.31 | 1.01 | .00   | -.03  | .0205  | 42.035 | .0000  | .000 | .000  |
| 334-000         | .16 | .16 | 5906.45 | 126.42 | .036 | .00 | 16571.56 | 1.04 | .00   | -.03  | .0205  | 41.927 | .0000  | .000 | .000  |
| 353-000         | .16 | .16 | 5906.41 | 129.87 | .037 | .00 | 16582.03 | 1.06 | .00   | -.03  | .0205  | 41.819 | .0000  | .000 | .000  |
| 360-000         | .16 | .16 | 5906.38 | 133.32 | .038 | .00 | 16592.44 | 1.09 | .00   | -.03  | .0205  | 41.710 | .0000  | .000 | .000  |
| 383-000         | .16 | .16 | 5906.34 | 136.77 | .039 | .00 | 16602.77 | 1.12 | .00   | -.03  | .0205  | 41.602 | .0000  | .000 | .000  |
| 394-000         | .16 | .16 | 5906.30 | 140.22 | .040 | .00 | 16613.04 | 1.15 | .00   | -.03  | .0205  | 41.494 | .0000  | .000 | .000  |
| 413-000         | .16 | .16 | 5906.29 | 143.17 | .040 | .00 | 16615.85 | 1.16 | .00   | -.01  | .0205  | 41.464 | .0000  | .000 | .000  |
| 419-000         | .16 | .16 | 5906.24 | 145.90 | .042 | .00 | 16619.13 | 1.19 | .00   | -.03  | .0205  | 41.192 | .0000  | .000 | .000  |
| 427-000         | .16 | .16 | 5906.21 | 148.89 | .043 | .00 | 16631.95 | 1.21 | .00   | -.02  | .0205  | 41.174 | .0000  | .000 | .000  |
| 427-000         | .16 | .16 | 5905.90 | 173.44 | .050 | .00 | 14067.75 | 1.21 | .00   | -.00  | .0205  | 41.029 | .0000  | .000 | .000  |
| 442-000         | .16 | .16 | 5906.03 | 165.92 | .048 | .00 | 15015.34 | 1.23 | .00   | -.03  | .0205  | 41.990 | .0000  | .000 | .000  |
| 457-000         | .16 | .16 | 5906.09 | 159.06 | .046 | .00 | 16008.32 | 1.26 | .00   | -.03  | .0205  | 42.967 | .0000  | .000 | .000  |
| 463-000         | .16 | .16 | 5906.12 | 156.43 | .045 | .00 | 16426.09 | 1.27 | .00   | -.01  | .0205  | 43.364 | .0000  | .000 | .000  |
| 473-000         | .16 | .16 | 5906.07 | 159.99 | .046 | .00 | 16425.08 | 1.30 | .00   | -.03  | .0205  | 43.256 | .0000  | .000 | .000  |
| 493-000         | .16 | .16 | 5906.03 | 163.56 | .047 | .00 | 16422.08 | 1.33 | .00   | -.03  | .0205  | 43.147 | .0000  | .000 | .000  |
| 503-000         | .16 | .16 | 5905.98 | 167.12 | .048 | .00 | 16419.08 | 1.36 | .00   | -.03  | .0205  | 43.039 | .0000  | .000 | .000  |
| 523-000         | .16 | .16 | 5905.94 | 173.69 | .049 | .00 | 16416.08 | 1.38 | .00   | -.03  | .0205  | 42.931 | .0000  | .000 | .000  |
| 533-000         | .16 | .16 | 5905.89 | 174.25 | .050 | .00 | 16413.08 | 1.41 | .00   | -.03  | .0205  | 42.822 | .0000  | .000 | .000  |
| 553-000         | .16 | .16 | 5905.84 | 177.82 | .051 | .00 | 16410.07 | 1.44 | .00   | -.03  | .0205  | 42.714 | .0000  | .000 | .000  |
| 560-000         | .16 | .16 | 5905.79 | 181.39 | .052 | .00 | 16407.10 | 1.47 | .00   | -.03  | .0205  | 42.605 | .0000  | .000 | .000  |
| 583-000         | .16 | .16 | 5905.74 | 184.96 | .053 | .00 | 16404.11 | 1.50 | .00   | -.03  | .0205  | 42.497 | .0000  | .000 | .000  |
| 593-000         | .16 | .16 | 5905.69 | 188.52 | .054 | .00 | 16401.12 | 1.53 | .00   | -.03  | .0205  | 42.389 | .0000  | .000 | .000  |
| 613-000         | .16 | .16 | 5905.64 | 192.09 | .055 | .00 | 16398.14 | 1.56 | .00   | -.03  | .0205  | 42.280 | .0000  | .000 | .000  |

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|----------|-----|-----|---------|--------|------|-----|----------|------|-----|------|-------|--------|-------|------|
| 623-204  | .16 | .16 | 5905.58 | 195.66 | .054 | .00 | 16395.15 | 1.59 | .00 | -.03 | .0205 | 42.172 | .0000 | .000 |
| 643-204  | .16 | .16 | 5905.53 | 192.23 | .057 | .00 | 16392.17 | 1.61 | .00 | -.03 | .0205 | 42.064 | .0000 | .000 |
| 658-204  | .16 | .16 | 5905.47 | 202.80 | .058 | .00 | 16389.20 | 1.64 | .00 | -.03 | .0205 | 41.955 | .0000 | .000 |
| 673-204  | .16 | .16 | 5905.42 | 206.37 | .059 | .00 | 16386.22 | 1.67 | .00 | -.03 | .0205 | 41.847 | .0000 | .000 |
| 688-204  | .16 | .16 | 5905.36 | 209.95 | .060 | .00 | 16383.25 | 1.70 | .00 | -.03 | .0205 | 41.738 | .0000 | .000 |
| 703-204  | .16 | .16 | 5905.30 | 213.52 | .061 | .00 | 16380.28 | 1.73 | .00 | -.03 | .0205 | 41.630 | .0000 | .000 |
| 718-204  | .16 | .16 | 5905.24 | 217.09 | .062 | .00 | 16377.31 | 1.76 | .00 | -.03 | .0205 | 41.522 | .0000 | .000 |
| 733-204  | .16 | .16 | 5905.18 | 219.00 | .063 | .00 | 16375.73 | 1.77 | .00 | -.02 | .0205 | 41.464 | .0000 | .000 |
| 748-204  | .16 | .16 | 5905.12 | 222.43 | .064 | .00 | 16372.80 | 1.80 | .00 | -.03 | .0205 | 41.140 | .0000 | .000 |
| 763-204  | .16 | .16 | 5905.06 | 223.61 | .064 | .00 | 16369.20 | 1.81 | .00 | -.01 | .0205 | 41.240 | .0000 | .000 |
| 778-204  | .16 | .16 | 5904.99 | 225.51 | .073 | .00 | 16366.72 | 1.95 | .00 | -.00 | .0205 | 41.029 | .0000 | .000 |
| 793-204  | .16 | .16 | 5904.93 | 248.35 | .071 | .00 | 14972.15 | 1.84 | .00 | -.03 | .0205 | 41.104 | .0000 | .000 |
| 808-204  | .16 | .16 | 5904.87 | 241.87 | .069 | .00 | 15597.03 | 1.86 | .00 | -.03 | .0205 | 41.178 | .0000 | .000 |
| 823-204  | .16 | .16 | 5904.81 | 236.00 | .068 | .00 | 16224.19 | 1.89 | .00 | -.03 | .0205 | 41.253 | .0000 | .000 |
| 838-204  | .16 | .16 | 5904.75 | 234.71 | .067 | .00 | 16370.23 | 1.90 | .00 | -.01 | .0205 | 41.270 | .0000 | .000 |
| 853-204  | .16 | .16 | 5904.69 | 238.34 | .068 | .00 | 16363.57 | 1.93 | .00 | -.03 | .0205 | 41.093 | .0000 | .000 |
| 868-204  | .16 | .16 | 5904.63 | 241.97 | .069 | .00 | 16356.92 | 1.95 | .00 | -.03 | .0205 | 40.916 | .0000 | .000 |
| 883-204  | .16 | .16 | 5904.57 | 245.60 | .070 | .00 | 16350.28 | 1.98 | .00 | -.03 | .0205 | 40.739 | .0000 | .000 |
| 898-204  | .16 | .16 | 5904.51 | 249.22 | .071 | .00 | 16343.67 | 2.01 | .00 | -.03 | .0205 | 40.563 | .0000 | .000 |
| 913-204  | .16 | .16 | 5904.45 | 253.19 | .073 | .00 | 16315.82 | 2.04 | .00 | -.03 | .0205 | 39.794 | .0000 | .000 |
| 928-204  | .16 | .16 | 5904.39 | 257.10 | .074 | .00 | 16287.96 | 2.07 | .00 | -.03 | .0205 | 39.025 | .0000 | .000 |
| 943-204  | .16 | .16 | 5904.33 | 261.13 | .075 | .00 | 16260.09 | 2.10 | .00 | -.03 | .0205 | 38.255 | .0000 | .000 |
| 958-204  | .16 | .16 | 5904.27 | 265.12 | .076 | .00 | 16232.22 | 2.13 | .00 | -.03 | .0205 | 37.486 | .0000 | .000 |
| 973-204  | .16 | .16 | 5904.21 | 269.11 | .077 | .00 | 16204.33 | 2.15 | .00 | -.03 | .0205 | 36.717 | .0000 | .000 |
| 988-204  | .16 | .16 | 5904.15 | 273.11 | .078 | .00 | 16176.44 | 2.18 | .00 | -.03 | .0205 | 35.948 | .0000 | .000 |
| 1003-204 | .16 | .16 | 5904.09 | 277.11 | .079 | .00 | 16148.55 | 2.21 | .00 | -.03 | .0205 | 35.178 | .0000 | .000 |
| 1018-204 | .16 | .16 | 5904.03 | 281.13 | .081 | .00 | 16120.65 | 2.24 | .00 | -.03 | .0205 | 34.409 | .0000 | .000 |
| 1033-204 | .16 | .16 | 5903.97 | 285.15 | .082 | .00 | 16092.74 | 2.27 | .00 | -.03 | .0205 | 33.640 | .0000 | .000 |
| 1048-204 | .16 | .16 | 5903.91 | 289.18 | .083 | .00 | 16064.82 | 2.29 | .00 | -.03 | .0205 | 32.871 | .0000 | .000 |
| 1063-204 | .16 | .16 | 5903.85 | 293.22 | .084 | .00 | 16036.89 | 2.32 | .00 | -.03 | .0205 | 32.101 | .0000 | .000 |
| 1078-204 | .16 | .16 | 5903.79 | 297.27 | .085 | .00 | 16008.96 | 2.35 | .00 | -.03 | .0205 | 31.332 | .0000 | .000 |
| 1093-204 | .16 | .16 | 5903.73 | 298.89 | .086 | .00 | 15997.77 | 2.36 | .00 | -.01 | .0205 | 31.024 | .0000 | .000 |
| 1108-204 | .16 | .16 | 5903.67 | 302.95 | .087 | .00 | 15969.84 | 2.39 | .00 | -.03 | .0205 | 30.483 | .0000 | .000 |
| 1123-204 | .16 | .16 | 5903.61 | 307.01 | .088 | .00 | 15941.83 | 2.42 | .00 | -.03 | .0205 | 29.942 | .0000 | .000 |
| 1138-204 | .16 | .16 | 5903.55 | 313.65 | .089 | .00 | 15916.69 | 2.44 | .00 | -.02 | .0205 | 29.459 | .0000 | .000 |
| 1153-204 | .16 | .16 | 5903.49 | 317.48 | .085 | .00 | 15823.73 | 2.53 | .00 | -.05 | .0204 | 29.460 | .0000 | .000 |
| 1168-204 | .16 | .16 | 5903.43 | 321.48 | .082 | .00 | 15730.77 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1183-204 | .16 | .16 | 5903.37 | 325.48 | .082 | .00 | 15637.81 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1198-204 | .16 | .16 | 5903.31 | 329.48 | .082 | .00 | 15544.85 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1213-204 | .16 | .16 | 5903.25 | 333.48 | .082 | .00 | 15451.89 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1228-204 | .16 | .16 | 5903.19 | 337.48 | .082 | .00 | 15358.93 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1243-204 | .16 | .16 | 5903.13 | 341.48 | .082 | .00 | 15265.97 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1258-204 | .16 | .16 | 5903.07 | 345.48 | .082 | .00 | 15173.01 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1273-204 | .16 | .16 | 5903.01 | 349.48 | .082 | .00 | 15080.05 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1288-204 | .16 | .16 | 5902.95 | 353.48 | .082 | .00 | 14987.09 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1303-204 | .16 | .16 | 5902.89 | 357.48 | .082 | .00 | 14894.13 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1318-204 | .16 | .16 | 5902.83 | 361.48 | .082 | .00 | 14801.17 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1333-204 | .16 | .16 | 5902.77 | 365.48 | .082 | .00 | 14708.21 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1348-204 | .16 | .16 | 5902.71 | 369.48 | .082 | .00 | 14615.25 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1363-204 | .16 | .16 | 5902.65 | 373.48 | .082 | .00 | 14522.29 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1378-204 | .16 | .16 | 5902.59 | 377.48 | .082 | .00 | 14429.33 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1393-204 | .16 | .16 | 5902.53 | 381.48 | .082 | .00 | 14336.37 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1408-204 | .16 | .16 | 5902.47 | 385.48 | .082 | .00 | 14243.41 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1423-204 | .16 | .16 | 5902.41 | 389.48 | .082 | .00 | 14150.45 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1438-204 | .16 | .16 | 5902.35 | 393.48 | .082 | .00 | 14057.49 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1453-204 | .16 | .16 | 5902.29 | 397.48 | .082 | .00 | 13964.53 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1468-204 | .16 | .16 | 5902.23 | 401.48 | .082 | .00 | 13871.57 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1483-204 | .16 | .16 | 5902.17 | 405.48 | .082 | .00 | 13778.61 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1498-204 | .16 | .16 | 5902.11 | 409.48 | .082 | .00 | 13685.65 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1513-204 | .16 | .16 | 5902.05 | 413.48 | .082 | .00 | 13592.69 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1528-204 | .16 | .16 | 5901.99 | 417.48 | .082 | .00 | 13499.73 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1543-204 | .16 | .16 | 5901.93 | 421.48 | .082 | .00 | 13406.77 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1558-204 | .16 | .16 | 5901.87 | 425.48 | .082 | .00 | 13313.81 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1573-204 | .16 | .16 | 5901.81 | 429.48 | .082 | .00 | 13220.85 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1588-204 | .16 | .16 | 5901.75 | 433.48 | .082 | .00 | 13127.89 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1603-204 | .16 | .16 | 5901.69 | 437.48 | .082 | .00 | 13034.93 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1618-204 | .16 | .16 | 5901.63 | 441.48 | .082 | .00 | 12941.97 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1633-204 | .16 | .16 | 5901.57 | 445.48 | .082 | .00 | 12849.01 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1648-204 | .16 | .16 | 5901.51 | 449.48 | .082 | .00 | 12756.05 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1663-204 | .16 | .16 | 5901.45 | 453.48 | .082 | .00 | 12663.09 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1678-204 | .16 | .16 | 5901.39 | 457.48 | .082 | .00 | 12570.13 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1693-204 | .16 | .16 | 5901.33 | 461.48 | .082 | .00 | 12477.17 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1708-204 | .16 | .16 | 5901.27 | 465.48 | .082 | .00 | 12384.21 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1723-204 | .16 | .16 | 5901.21 | 469.48 | .082 | .00 | 12291.25 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1738-204 | .16 | .16 | 5901.15 | 473.48 | .082 | .00 | 12198.29 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1753-204 | .16 | .16 | 5901.09 | 477.48 | .082 | .00 | 12105.33 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1768-204 | .16 | .16 | 5901.03 | 481.48 | .082 | .00 | 12012.37 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1783-204 | .16 | .16 | 5900.97 | 485.48 | .082 | .00 | 11919.41 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1798-204 | .16 | .16 | 5900.91 | 489.48 | .082 | .00 | 11826.45 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1813-204 | .16 | .16 | 5900.85 | 493.48 | .082 | .00 | 11733.49 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1828-204 | .16 | .16 | 5900.79 | 497.48 | .082 | .00 | 11640.53 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1843-204 | .16 | .16 | 5900.73 | 501.48 | .082 | .00 | 11547.57 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1858-204 | .16 | .16 | 5900.67 | 505.48 | .082 | .00 | 11454.61 | 2.53 | .00 | -.03 | .0204 | 20.670 | .0000 | .000 |
| 1873-204 | .16 | .   |         |        |      |     |          |      |     |      |       |        |       |      |

| SLOT<br>INTERFACE<br>LOCATION<br>IN.    | PO<br>PSIA | P<br>PSIA | T<br>DEG. R | U<br>FT/SEC | AP<br>SQ. IN. | DWDT<br>LB/SEC | AB<br>SQ. IN. | RB<br>IN/SEC | DELTA<br>TAU<br>IN. | *SLOT<br>LB/SEC |
|-----------------------------------------|------------|-----------|-------------|-------------|---------------|----------------|---------------|--------------|---------------------|-----------------|
| FORWARD                                 | 1.1676+02  | 1.6150-01 | 1.6146-01   | 5.9068+03   | 7.5488+01     | 1.6460+04      | 0.0000        | 0.0000       | 0.0000              | 6.1432-01       |
| AFT                                     | 1.1677+02  | 1.6147-01 | 1.6143-01   | 5.9067+03   | 7.5503+01     | 1.6460+04      | 0.0000        | 0.0000       | 0.0000              | 6.1434-01       |
| GAS BUILDUP IN SLOT, DW/DT = -1.9183-05 |            |           |             |             |               |                |               |              |                     |                 |
| FORWARD                                 | 4.2705+02  | 1.6160-01 | 1.6143-01   | 5.9062+03   | 1.4888+02     | 1.6383+04      | 0.0000        | 0.0000       | 0.0000              | 1.2058+00       |
| AFT                                     | 4.2706+02  | 1.6153-01 | 1.6136-01   | 5.9059+03   | 1.4893+02     | 1.6303+04      | 0.0000        | 0.0000       | 0.0000              | 1.2058+00       |
| GAS BUILDUP IN SLOT, DW/DT = -1.9092-05 |            |           |             |             |               |                |               |              |                     |                 |
| FORWARD                                 | 7.4634+02  | 1.6175-01 | 1.6136-01   | 5.9051+03   | 2.2364+02     | 1.6383+04      | 0.0000        | 0.0000       | 0.0000              | 1.8109+00       |
| AFT                                     | 7.4635+02  | 1.6162-01 | 1.6124-01   | 5.9045+03   | 2.2380+02     | 1.6383+04      | 0.0000        | 0.0000       | 0.0000              | 1.8109+00       |
| GAS BUILDUP IN SLOT, DW/DT = -1.9082-05 |            |           |             |             |               |                |               |              |                     |                 |



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